WEALTH CREATION IN MERGERS AND ACQUISITIONS : A STUDY OF CHINESE CORPORATE RESTRUCTURINGS

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Chapter 4 EMH and Abnormal Returns for Chinese Acquisitions of Control

4.0 Introduction

When the term "efficient market" was introduced into the economics literature, it was defined as a market which "adjusts rapidly to new information"[181]. Event studies, pioneered by Fama et al (1969), generally found price adjustment following major events such as earnings announcements, stock-splits, changes in firms' dividend policies and mergers and acquisitions (M&As).

It soon became clear that although rapid adjustment to new information is an important element of an efficient market, it is not the only one. A more modern definition is that asset prices in an efficient market "*fully* reflect all available information"[182]. This implies that the market processes information rationally, in the sense that relevant information is not ignored, and systematic errors are not made. As a consequence, prices are always at levels consistent with "fundamentals."

Assume that share prices reflect the expected future profit and dividend streams according to the Efficient Market Hypothesis (EMH), stock market data could be used to estimate the effects of M&As. As documented in Chapter 3, M&A studies generally reveal that mergers and acquisitions result in large positive wealth effects for target shareholders. Research on the wealth effect for shareholders of the acquiring companies, however, is more ambivalent. In addition, studies regarding

[181] Fama (1970)
[182] Fama, (1991)

EMH and effects of M&As are mainly conducted using data from well developed financial markets, in particular, the US and UK. There has been limited empirical evidence from emerging markets and they tend to be less comprehensive and less conclusive. This is due to the transitional and dynamic nature of the emerging markets. During China's transition to a market economy, its financial system, for instance, has been undergoing a structural shift from a heavily-regulated and almost exclusively bank-based system to one with much greater diversity of institutions including a sophisticated stock market. Such a structural shift reflects the dynamic nature of its stock market. In addition, the emerging markets seem to share some common characteristics – a relatively shorter history, a stricter capital control policy, a less well-developed legal framework, frequently modified regulations, and last but not least, poorly educated investors – which contribute to the difficulties in studying behaviours of the emerging markets.

However, there have been a growing number of empirical studies regarding emerging markets in recent years. The main reasons for this are:

1. The emerging markets are playing an increasingly more important role in the worldwide financial stage and investors worldwide desire to know more about how they are operated and their performances;
2. Scholars wish to study these markets to gain a more complete understanding of some of the fundamental theories in finance in a wider environment; and
3. More empirical research has become feasible and more results have been reported simply because more data has become available.

China's stock market has expanded rapidly since the early 1990s. The speculation is that China's securities market has the potential to rank among the top four or five in

the world within the coming decade[183]. Yet relatively little is known about this young player in the global community.

Previous empirical research concerning the Chinese market reports various results. There is evidence of market efficiency, however, there is, on occasion, contradictory evidence of departure from market efficiency.[184]

Whilst earlier empirical studies on China's stock market have mainly focused on the correlation structure of different types of shares traded in the market, namely A shares and B shares, more recent research has started to use event study methods to investigate announcement effects, such as those of earnings and announcements of acquisitions of control. This chapter attempts to extend the existing literature of testing the EMH by examining Chinese listed firms' acquisitions of control announcement effects between 1996 and 2000. Compared to previous research, this study contributes to knowledge by using a more up-to-date data, a more clearly defined event and the well-established event study approach.

The empirical results presented in this chapter does provide some evidence that the domestic Chinese A share markets may be efficient in semi-strong form, yet it should be noted that leakage of information or insider trading prior to the announcement could contribute to the market reaction. The empirical results further found that the shareholders of the targeted firms (i.e. the firms whose control is transferred) benefit around, and in particular prior to the announcement in China. This finding is

[183] Ma and Folkerts-Landau (2001)
[184] For example, Bailey (1994), Ma (1996), Xu (2000), etc.

consistent with the evidence from the West that value has been created by M&As, in this case, to the targets' shareholders.

The rest of this chapter is organised as follows. Section 4.1 re-addresses some of the key terminologies regarding the Chinese stock markets. Section 4.2 recalls some selected empirical literature and proposes a joint hypothesis. Data and methods are described in the following section 4.3 and 4.4. Section 4.5 presents the results and 4.6 concludes this chapter.

4.1 Stock Market and M&As in China

This section briefly reviews the stock exchanges in China, the type of shares issued by Chinese listed companies and M&As in China.[185]

4.1.1 Stock Markets

There are two official national exchanges in China – the Shanghai Stock Exchange (SHSE) was established on December 19, 1990, and the Shenzhen Stock Exchange (SZSE) was founded on July 3, 1991. The size of the two exchanges had expanded rapidly. At the end of 2004, there were 837 and 536 firms listed on the SHSE and SZSE, respectively. Table 4.1.1 below provides a summary of China's Stock Exchanges.

Table 4.1.1 Brief Summary of China's Stock Exchanges

	SHSE	SZSE
Date of establishment	19th December, 1990	3rd April, 1991
Capitalisation (100 Million)	29,805	12,653
No. of companies listed	837	536

Note: (as at the end of 2004)

Source: SHSE and SZSE Fact Book 2004, published by China Financial Publisher

[185] For a comprehensive description, please refer to Chapter 2.

4.1.2 Share Types

Like many developing countries, China set up legal restrictions on the foreign ownership of domestic equity in order to maintain control over local firms, especially those companies that are of strategic and national importance. A major reason for this arrangement is to attract foreign funds without worrying about the loss of ownership control. Thus, a local firm in China may issue two different types of shares, namely, A shares and B shares. Foreign investors are allowed to hold only the B shares but not the A shares.[186] The markets for the A shares and B shares are completely segmented during the period of study, while the segmentation in most other markets are only partial.

In addition to the segmentation caused by the A shares and B shares, a large percentage of non-tradable "state-owned shares" further fragments the market. "State-owned shares" include "state shares" and "legal-person shares". "State shares" are shares obtained and made by a (public) institution on behalf of the state to a company limited by shares. "Legal-person shares" are the shares obtained by a legal-person entity in exchange for the capital contribution and made by that entity to a company limited by shares using the state assets to which the entity had a legal right to dispose of. The difference may be vague, however, it is not without its necessity given its historical background as detailed in Chapter 2.

State-owned shares represent the dominant percentage in today's stock corporations' shares and they are not traded in the secondary market. This is to comply with the policies of maintaining a necessary dominant position for state shares and legal-

[186] It was not until 2001 that domestic investors were allowed to trade in B share markets.

person shares, whereas other shares are non-controlling and minority. As a result, the trading of state shares is highly restricted while the trading of legal-person shares is confined within the scope of legal-persons only.

4.1.3 M&As or Acquisitions of Control in China

In developed economies like those of the US and some European and Asian countries, M&A transactions can assume numerous forms. In the US, for example, an acquisition could take the form of a purchase of a target company's assets with either cash or shares; a cash purchase of shares in the target; a purchase of shares in the target with the purchaser's shares; or some combination of these forms. Mergers, like acquisitions, can be effected with shares or cash. The transaction can leave the purchaser in place, in the case of a forward merger; leave the target in place, in the case of a reverse merger; or involve a subsidiary of the purchaser merging with the target, in the case of a triangular merger.

M&A transactions in China, however, are in forms that are not entirely identical to the ones described above due the unique share structure of listed companies and tighter corporate restructuring control in China. They tend to appear in the form of the transaction of state-owned shares between "legal-person"s. Since in any listed company the majority of shares are state-owned shares, it is not difficult to see that the trading/changing hand of these shares often brings changes in ownership/control, which is the ultimate goal of any merger or takeover. This justifies the use of western M&A research methodology to analyse the acquisitions of control in China.

4.2 Literature and Hypothesis

This section briefly recalls some selected empirical evidence on the tests of EMH and the target shareholders' gain around the announcement date.[187] A joint hypothesis is then proposed.

4.2.1 Tests of EMH in China

Mookerjee and Yu (1999) found the existence of significant inefficiency including weekend and holiday effects in China's two stock markets. This result is supported by Ma (2000) who also found evidence of the day-of-the-week and the month-of-the-year effects in the Chinese stock markets. Chen et al. (2001) found "Tuesdays anomaly" existed during 1992–1997 in the Chinese stock markets. On the contrary, Xu (2000) analysed the time series return and volatility patterns of the Shanghai market but found no day-of-the-week effect in returns in the Shanghai stock market.

More recent studies such as Groenewold et al.'s (2003), Su's (2003) and Gao and Tse's (2004) also report contradictory evidence. Overall, the studies of EMH in the Chinese context have produced varied but not conclusive results.

4.2.2 Abnormal Returns and M&As

It is well established in the western literature that takeovers tend to provide substantial economic benefits to shareholders of target firms. Numerous empirical studies have

[187] For a detailed review, please refer to Chapter 3.

found that acquired companies display statistically significant positive price responses to the announcement of a takeover attempt.[188]

One of the recent studies that reports this result is Moeller et al. (2004). By examining a sample of 12,023 acquisitions by public firms from 1980 to 2001, they find that the equally weighted abnormal announcement return is 1.1% over a 2 day event window. Zhang (2003) studied the Chinese M&As and also concludes that acquisitions creates value for the target's shareholders.

In contrast, there is more doubt as to whether takeovers, on average, provide gains to the shareholders of bidding firms. This, however, is of less concern for this study as only one acquirer is listed. Whether the shareholders of acquiring firms gain or lose from M&As in China could only be best tested in the future when there are more data available.

4.2.3 A Joint Hypothesis

Assuming that there is semi-strong market efficiency, one can test for the effect of an acquisition on expected future profit and dividend streams by measuring the change in returns to acquiring company shareholders. But considering the unique characteristics or the emerging stock markets, especially those of China, and the limited evidence concerning the validity of the EMH in China, it is not logical to take this basic assumption for granted in this study.

[188] For a detailed review, please refer to Chapter 3.

In order to correctly measure the effects of an acquisition in the Chinese context, it is important to test the semi-strong market efficiency hypothesis at the same time. A joint behavioural hypothesis is therefore proposed as follows.

The Chinese A share market fully reflects expected future profit and dividend streams and the announcements of mergers or acquisitions in China create no positive abnormal returns for targeted firms.

4.3 Data

The initial sample includes all 172 legal-person share transactions involving listed companies between 1st January 1996 and 31st December 2000, inclusive. This section provides a detailed prescription of the data collected.

4.3.1 Study Period

According to various statistics, seven listed firms were involved in restructurings prior to 1996 (one in 1993, six in 1994 and none in 1995) [189], they appear to be "special" cases[190] or cases on an experimental base. This perhaps explains why the government did not approve any legal-person share transaction in 1995. 1996 was therefore chosen to be the starting point of the studied period. In 1997, there were further 10 transactions permitted. After a further two year trail, the annual numbers of transactions increased sharply to 42 and 60 in the following two years, respectively.

[189] Please refer to Table 2.4.3 in Chapter 2.
[190] For instance, the controversial "Bao-yan event" in 1993 is a hostile takeover via A share acquisition.

The Chinese financial system has traditionally been dominated by the state banks. When stock exchanges were established in the early 1990s, banks were allowed to set up departments or subsidiaries as brokers and were dominant in share trading. However as the Chinese stock markets expanded, the direct involvement of banks became risky and was considered inappropriate. In 1994 banks were required to withdraw their direct involvement in the stock market. Subsequently, the broker departments became independent broker houses (Wan, 2002). Nonetheless, banks continued to funnel large amounts of funds into the stock market and provided a substantial part of liquidity. In 1996, regulations were further tightened by preventing banks from offering loans for stock transactions. The aim of these regulations was to encourage independent competitive securities firms to be the main sources of funds such as mutual funds.

In 2000, however, the 1996 regulations were reversed and by the end of 2000 banks resumed their positions as main sources of funds for stock investment (Wan, 2002). It is likely that these changes in the regulations governing the relationship between the banks and the stock market had effects on the efficiency with which the markets processed information. This may explain the reduction of the number of legal-person share transactions in 2000, down to 56. The end of 2000 was therefore chosen as the end of the period for collecting data to try to minimise any unwanted potentially distorting effects due to the changing roles of banks.

4.3.2 The Event

Altogether, 172 transactions were initially identified as 172 listed companies selling their legal-person shares to another party between 1st January 1996 and 31st December 2000, inclusive. Details include the date of each public announcement of the transaction; the number of shares involved; the percentage of shares involved and limited information regarding the acquirer.

The average percentage of legal-person shares (out of the total shares of a target) in these transactions was 30.99%. The total value of state-owned shares traded was RMB 16,580 million (over US$2,000 million).

4.3.3 Event date

The event dates, i.e. when such transaction was first publicly announced during the time period studied, were collected from several sources, including individual company reports provided by the Shenzhen Stock Exchange, Annual reports from the Shanghai Exchange, Trading records and internal database from Guotai Securities Ltd., Securities Daily (Shenzhen) and Shanghai Securities News.

4.3.4 Daily Price

The daily closing prices of these 172 companies' A shares, were then obtained from the DataStream database. Three companies had to be excluded due to data

unavailability in DataStream. This reduced the sample size to 169. Market composite index is also obtained from the DataStream for two markets, respectively.

4.3.5 Company Reports

Information such as the ownership percentages of the targets and major accounting ratios was primarily gathered from the individual company reports provided by the SZSE and obtained from the internal database from Guotai Securities Ltd.

4.3.6 A Statistic Summary

The following table breaks down the sample into sub-groups by year, listed location, and industry category.

Table 4.3.6 A Summary of Data

Year	Category*	#	%		#	%		sub-Total	%
		Shenzhen Market			Shanghai Market			Over all	
1996	A	0	0.00%		0	N/A		0	0.00%
	B	0	0.00%		0	N/A		0	0.00%
	C	0	0.00%		0	N/A		0	0.00%
	D	1	100.00%		0	N/A		1	100.00%
	E	0	0.00%		0	N/A		0	0.00%
	sub-Total	**1**			**0**			**1**	
1997	A	5	100.00%		3	60.00%		8	80.00%
	B	0	0.00%		1	20.00%		1	10.00%
	C	0	0.00%		1	20.00%		1	10.00%
	D	0	0.00%		0	0.00%		0	0.00%
	E	0	0.00%		0	0.00%		0	0.00%
	sub-Total	**5**			**5**			**10**	
1998	A	12	63.16%		13	56.52%		25	59.52%
	B	2	10.53%		4	17.39%		6	14.29%
	C	3	15.79%		0	0.00%		3	7.14%
	D	0	0.00%		0	0.00%		0	0.00%
	E	2	10.53%		6	26.09%		8	19.05%
	sub-Total	**19**			**23**			**42**	

*Listed companies are classified to different categories according to the nature of their business:
A-Industrial; B-Commercial; C-Real Estate; D-Public Affairs and E-miscellaneous

Table 4.3.6 Summary of Data (*Cont.*)									
Year	**Category***	**#**	**%**		**#**	**%**		**sub-Total**	**%**
		Shenzhen Market			**Shanghai Market**			**Over all**	
1999	A	18	54.55%		18	66.67%		36	60.00%
	B	6	18.18%		2	7.41%		8	13.33%
	C	1	3.03%		0	0.00%		1	1.67%
	D	2	6.06%		2	7.41%		4	6.67%
	E	6	18.18%		5	18.52%		11	18.33%
	sub-Total	**33**			**27**			**60**	
2000	A	23	67.65%		13	59.09%		36	64.29%
	B	4	11.76%		6	27.27%		10	17.86%
	C	3	8.82%		0	0.00%		3	5.36%
	D	2	5.88%		0	0.00%		2	3.57%
	E	2	5.88%		3	13.64%		5	8.93%
	sub-Total	**34**			**22**			**56**	
				Overall					
1996 I 2000	A	58	63.04%		47	61.04%		105	62.13%
	B	12	13.04%		13	16.88%		25	14.79%
	C	7	7.61%		1	1.30%		8	4.73%
	D	5	5.43%		2	2.60%		7	4.14%
	E	10	10.87%		14	18.18%		24	14.20%
	Total	**92**			**77**			**169**	

*Listed companies are classified to different categories according to the nature of their business:
A-Industrial; B-Commercial; C-Real Estate; D-Public Affairs and E-miscellaneous

A further 9 transactions had to be excluded from the final sample because they were listed for less than 250 days until the transaction, whereby the whole estimation period (see section 4.4) could not be considered, reducing the final number of event covered in this study to 160.

4.4 Step-by-Step Methodology

In this section, a step-by-step description is presented of how the single factor Market Model, Mean-adjusted Return Model and Market-adjusted Return Model were used to estimate the abnormal returns in the event studies. The description follows traditional event study methodology and the significance test.

4.4.1 Estimation

The market model assumes that at any given time the return on a portfolio can be described by a linear function of the return on a market portfolio and a stochastic error. Mathematically, the market model is described by:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (4.1)$$

where

R_{it} = stock return of company i at time t;

R_{mt} = stock return of market portfolio m at time t;

α_i, β_i = parameters of the relationship between stock returns of company i and the market portfolio;

ε_{it} = estimation error, a stochastic term assumed to be distributed normally with mean equal to zero, constant variance for each company and zero correlation over observations and time;

and

t = day measured relative to the event, where $t = 0$ is the day of the announcement; $t = -1$, the day immediately preceding the announcement; and $t = +1$, the trading day immediately following the announcement, etc.

The parameters α_i and β_i are estimated using the Ordinary Least Squares (OLS) method over the estimated period – the estimation period in my study is from trading day-250 to trading day-61. The event study method assumes that the parameters are constant over the estimation and event periods, and the predicted returns are assumed

to be unbiased estimates of the actual returns unless firm-specific information significantly influences the returns.

An important decision in event studies is the choice of the event day, trading day 0. The event day in the studies has been determined from the first publication of the event, with the event day equalling the publication day if it is a trading day, and otherwise being the first trading day after the publication day.

4.4.2 Abnormal Returns for Event Period

The observed abnormal return (AR_{it}) for company i on day t is then calculated as the difference between the actual returns of the studied companies (R_{it}) and the predicted returns ($\hat{\alpha}_i + \hat{\beta}_i R_{mt}$), calculated from the market portfolio using estimates of the parameters α_i and β_i in equation (4.1):

Market Model: $$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt} \qquad (4.2)$$

For the Mean-adjusted Return Model, the predicted return in the absence of any information effects is assumed to be the mean return of the share over the estimation period:

Mean-adjusted Return Model: $$AR_{it} = R_{it} - \bar{R}_i \qquad (4.3)$$

For the Market-adjusted Return Model, the predicted return is assumed to be the market return over the estimation period:

Market-adjusted Return Model: $AR_{it} = R_{it} - R_{mt}$ (4.4)

where

$\bar{R}_i$ is the average return of the share during the estimation period.

The cumulative abnormal return of company i over the event period is then estimated by:

$$CAR_i = \sum_{t=1}^{M} AR_{it} \quad (4.5)$$

where

M = number of days in the event period;

AR_{it} is determined by equation 4.2, 4.3, or 4.4.

The average abnormal return of the studied portfolio on time t AAR_t is:-

$$AAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{it} \quad (4.6)$$

where

N = number of shares.

Thus all shares for the same event period t form an equally weighted portfolio and are treated as a single observation. Then the cumulative average abnormal return $CAAR_{NM}$ of the studied portfolio is then:

$$CAAR_{NM} = \frac{1}{N} \sum_{i=1}^{N} \sum_{t=1}^{M} AR_{it} \quad (4.7)$$

where

M = number of time periods under consideration.

The values of AAR_t and $CAAR$ calculated from the three models are presented in Table 4.5a. (see Section 4.5)

4.4.3 Significance Test

All three models require data from the estimation period to allow statistical significance tests. The term "estimation error" will be used when referring to the estimation period and "abnormal return" to the event period.

Estimation errors for all shares during the estimation period were calculated as below:

Market Model: $$\varepsilon_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \quad (4.8)$$

Mean-adjusted Return Model: $$\varepsilon_{it} = R_{it} - \bar{R}_i \quad (4.9)$$

Market-adjusted Return Model: $$\varepsilon_{it} = R_{it} - R_{mt} \quad (4.10)$$

The average estimation errors $\bar{\varepsilon}_t$ over all N shares in day t during the estimation period is calculated as follows:

$$\bar{\varepsilon}_t = \frac{1}{N}\sum_{i=1}^{N} \varepsilon_{it} \quad (4.11)$$

The average estimation error over all N shares for the entire estimation period, i=1,...T, is determined as follows:-

$$\bar{\bar{\varepsilon}} = \frac{1}{T}\sum_{i=1}^{T} \bar{\varepsilon}_t \quad (4.12)$$

where

T = number of observation days in the estimation period.

$\bar{\bar{\varepsilon}}$ effectively provides us with a benchmark of the estimation error over all N shares for all time periods in the estimation period. That is to say, if no corporate restructuring is forthcoming to cause share price, and hence stock returns, to increase or decrease materially from the normal level, $\bar{\bar{\varepsilon}}$ forms one's estimate of the error that is expected.

Subsequently, the standard deviation of the estimation errors across all shares in day t during the estimation period is determined as follows:-

$$S(\bar{\varepsilon}_t) = \sqrt{(\frac{1}{T-1})\sum_{t=1}^{T}(\bar{\varepsilon}_t - \bar{\bar{\varepsilon}})^2} \qquad (4.13)$$

Finally, to test the null hypothesis that the abnormal return in day t in the event period, the t statistic is used and defined as the abnormal return for that period (AAR_t, given by Equation 4.6) divided by the standard deviation determined in Equation 4.13:-

$$\text{t-value} = \frac{AAR_t}{S(\bar{\varepsilon}_t)} \qquad (4.14)$$

If the average abnormal return over all shares at time t, given by AAR_t, are independent from one time period to the next, identically distributed, and normal, then the t-value is distributed as Student's t. The degrees of freedom are then T-1. It is worthwhile noticing though, that since the average abnormal return is used, the test statistic takes into account cross-sectional dependence in the abnormal returns.

In order to test the presence of significant abnormal returns over multiple periods/intervals, the following equation is applied:-

$$\text{t-value} = \frac{\sum_{t=j}^{L}\left(\frac{AAR_t}{S(\bar{\varepsilon}_t)}\right)}{\sqrt{n}} \qquad (4.15)$$

where $S(\bar{\varepsilon}_t)$ is the value calculated in Equation 4.13, L is the last day of the event window and n is the number of days over which the cumulative abnormal return is calculated (L - j).

Table 4.5b shows the t stat values for the studied portfolio over different time intervals during the event period: day-60 to day+60 (n=121); day-20 to day+20 (n=41); day-10 to day+10 (n=21); day-5 to day+5 (n=11); and finally day-1 to day 0 (n=2).

The following Section 4.5 presents the empirical results.

4.5 Results and Analysis

As outlined in section 4.2.3, the aim of this chapter is to test the joint hypothesis:

The Chinese A share market fully reflects expected future profit and dividend streams and the announcements of mergers or acquisitions in China create no positive abnormal returns for targeted firms.

The joint hypothesis essentially breaks into two parts:

1) the market is efficient – the stock prices adjust quickly to any new information; and
2) the transactions create value for the target firms' shareholders.

4.5.1 Testing the EMH

The data shows that share prices underwent (significant) changes on the first announcement of the merger or acquisition. The aim of this section is to provide a formal statistical test of the null hypothesis of no abnormal returns.

Table 4.5a lists all the average abnormal returns (AARs) for the sample of 160 companies from day-60 to+60 (121 days in total) and the cumulative abnormal returns (CAARs). T-statistic values of daily AAR are listed along side. The results were computed from three models, namely the Market Model, the Mean Adjusted Return Model and the Market Adjusted Return Model.

All the models produce similar results, leading to the same conclusion. All three models identify significant abnormal returns at the 0.01 level as early as trading day-54. This seems to indicate that the market anticipated the forthcoming changes i.e. M&A activities and started to react accordingly. If this is true, then it means there might be some information leakage (for example when two companies started negotiation and started seeking permission from their superior governmental departments) as early as more than two months prior to the event day 0. We have to be cautious in this interpretation for three reasons:

1) as indicated in Chapter 2, there appears to be no regularity in terms of when the buyers and sellers initialise the negotiation.
2) a relatively long event window of 121 days (day-60 to day+60) is likely to include the effects of noise – news other than M&A activities which affects firms' value and this early abnormal return might have nothing to do with our concern: M&A activity.

Table 4.5.1a Average Abnormal Returns (Day-60 to Day+60)

	Market Model					Mean Adjusted Return Model					Market Adjusted Return Model				
Event Day	AAR	CAAR	t values	Sig.		AAR	CAAR	t values	Sig.		AAR	CAAR	t values	Sig.	
-60	0.06%	0.06%	0.274442			0.25%	0.25%	1.038279			0.15%	0.15%	0.746276		
-59	0.07%	0.12%	0.337245			0.09%	0.35%	0.37532			0.23%	0.39%	1.126441		
-58	0.14%	0.27%	0.706438			0.30%	0.64%	1.209299			0.28%	0.66%	1.354777		
-57	0.15%	0.42%	0.736432			0.25%	0.89%	1.011269			0.23%	0.90%	1.140158		
-56	0.18%	0.60%	0.900031			0.18%	1.08%	0.753038			0.27%	1.17%	1.310813		
-55	0.33%	0.93%	1.638356			0.23%	1.30%	0.928079			0.41%	1.58%	1.989658		*
-54	0.51%	1.44%	2.497255	**	*	0.63%	1.93%	2.571162	**	*	0.57%	2.15%	2.769595	**	*
-53	-0.19%	1.25%	-0.93568			-0.21%	1.72%	-0.87201			-0.08%	2.07%	-0.3974		
-52	0.19%	1.44%	0.945936			0.22%	1.94%	0.895368			0.34%	2.40%	1.628052		
-51	0.37%	1.82%	1.830393		*	0.03%	1.97%	0.120239			0.48%	2.88%	2.314562		*
-50	-0.20%	1.62%	-0.96665			-0.10%	1.87%	-0.41255			-0.07%	2.81%	-0.33438		
-49	0.49%	2.11%	2.421817	**	*	0.73%	2.60%	2.989691	**	*	0.65%	3.46%	3.157555	**	*
-48	0.34%	2.45%	1.670525		*	0.48%	3.08%	1.955529		*	0.48%	3.94%	2.337713	**	*
-47	-0.44%	2.01%	-2.16288			-0.51%	2.57%	-2.07404			-0.28%	3.66%	-1.35852		
-46	0.09%	2.10%	0.42758			0.28%	2.86%	1.158705			0.20%	3.87%	0.994855		
-45	-0.14%	1.96%	-0.69513			-0.08%	2.77%	-0.34433			-0.03%	3.84%	-0.15294		
-44	-0.07%	1.89%	-0.35194			0.11%	2.88%	0.455008			0.03%	3.87%	0.162845		
-43	0.13%	2.02%	0.659185			0.30%	3.19%	1.23571			0.23%	4.10%	1.1343		
-42	-0.03%	1.99%	-0.16347			-0.21%	2.97%	-0.87378			0.07%	4.18%	0.35917		
-41	0.15%	2.14%	0.750053			0.32%	3.29%	1.319784			0.20%	4.38%	0.958131		
-40	0.29%	2.43%	1.439725			0.44%	3.74%	1.802278		*	0.38%	4.75%	1.833932		*
-39	0.23%	2.66%	1.106296			0.07%	3.80%	0.26701			0.30%	5.06%	1.479275		
-38	0.34%	2.99%	1.64973		*	0.39%	4.19%	1.5879			0.50%	5.56%	2.425523	**	*
-37	-0.53%	2.46%	-2.60194			-0.22%	3.97%	-0.9131			-0.41%	5.15%	-1.97393		
-36	0.40%	2.86%	1.947965		*	0.39%	4.36%	1.591578			0.51%	5.66%	2.484132	**	*
-35	0.15%	3.01%	0.7263			0.42%	4.78%	1.717646		*	0.28%	5.94%	1.362536		
-34	-0.18%	2.83%	-0.86085			-0.13%	4.65%	-0.52149			-0.02%	5.92%	-0.10483		
-33	0.33%	3.16%	1.598389			0.47%	5.12%	1.900714		*	0.44%	6.36%	2.132821		*

Table 4.5.1a Average Abnormal Returns (Day-60 to Day+60) (*Cont.*)

	Market Model				Mean Adjusted Return Model				Market Adjusted Return Model			
Event Day	**AAR**	**CAAR**	**t values**	**Sig.**	**AAR**	**CAAR**	**t values**	**Sig.**	**AAR**	**CAAR**	**t values**	**Sig.**
-32	0.38%	3.54%	1.885844	*	0.62%	5.74%	2.547875	** *	0.51%	6.87%	2.488805	** *
-31	-0.05%	3.50%	-0.2267		0.01%	5.75%	0.049987		0.08%	6.95%	0.37832	
-30	0.19%	3.68%	0.919825		0.36%	6.12%	1.483164		0.31%	7.27%	1.521446	
-29	0.23%	3.91%	1.110855		0.23%	6.35%	0.9301		0.36%	7.63%	1.758019	*
-28	-0.03%	3.88%	-0.17085		-0.10%	6.24%	-0.42008		0.04%	7.67%	0.20766	
-27	0.06%	3.93%	0.293799		0.00%	6.25%	0.020031		0.14%	7.81%	0.699365	
-26	-0.03%	3.91%	-0.13013		0.04%	6.29%	0.160159		0.07%	7.89%	0.352166	
-25	-0.08%	3.82%	-0.41703		-0.07%	6.21%	-0.2925		0.06%	7.95%	0.30957	
-24	0.28%	4.10%	1.360809		0.47%	6.69%	1.936016	*	0.39%	8.34%	1.907657	*
-23	-0.10%	4.00%	-0.47801		-0.18%	6.51%	-0.73169		0.03%	8.37%	0.126174	
-22	0.15%	4.15%	0.716344		0.33%	6.84%	1.33255		0.24%	8.61%	1.189089	
-21	-0.11%	4.03%	-0.56378		0.16%	6.99%	0.640216		0.03%	8.65%	0.152035	
-20	0.31%	4.35%	1.545392		0.38%	7.37%	1.553276		0.44%	9.09%	2.13714	*
-19	-0.02%	4.32%	-0.12194		0.08%	7.46%	0.331292		0.04%	9.12%	0.180528	
-18	0.06%	4.39%	0.304317		0.15%	7.60%	0.60712		0.15%	9.27%	0.73371	
-17	0.10%	4.49%	0.494851		0.22%	7.82%	0.883291		0.22%	9.49%	1.059772	
-16	0.32%	4.81%	1.581801		0.24%	8.06%	0.988033		0.41%	9.91%	2.004056	*
-15	-0.09%	4.72%	-0.42315		0.07%	8.14%	0.291947		0.01%	9.91%	0.035023	
-14	0.28%	5.00%	1.380364		0.55%	8.69%	2.256674	*	0.40%	10.32%	1.961525	*
-13	0.47%	5.47%	2.298783	*	0.35%	9.04%	1.420362		0.59%	10.91%	2.859423	** *
-12	0.66%	6.13%	3.248137	** *	0.73%	9.76%	2.96269	** *	0.80%	11.70%	3.880543	** *
-11	0.29%	6.42%	1.437538		0.48%	10.24%	1.953212	*	0.43%	12.13%	2.081879	*
-10	0.21%	6.63%	1.033351		0.11%	10.35%	0.455874		0.27%	12.40%	1.316767	
-9	0.57%	7.20%	2.778871	** *	0.48%	10.83%	1.941938	*	0.72%	13.12%	3.475282	** *
-8	-0.06%	7.14%	-0.28179		0.12%	10.95%	0.499789		0.10%	13.23%	0.509303	
-7	0.10%	7.25%	0.512111		-0.05%	10.90%	-0.19895		0.15%	13.38%	0.73684	
-6	0.24%	7.49%	1.195145		0.23%	11.13%	0.918697		0.32%	13.70%	1.575852	
-5	0.24%	7.73%	1.168643		0.46%	11.59%	1.881877	*	0.44%	14.14%	2.142382	*

Table 4.5.1a Average Abnormal Returns (Day-60 to Day+60) (*Cont.*)

	Market Model					Mean Adjusted Return Model					Market Adjusted Return Model				
Event Day	**AAR**	**CAAR**	**t values**	**Sig.**		**AAR**	**CAAR**	**t values**	**Sig.**		**AAR**	**CAAR**	**t values**	**Sig.**	
-4	0.75%	8.47%	3.661759	**	*	0.66%	12.25%	2.697508	**	*	0.88%	15.02%	4.267138	**	*
-3	0.60%	9.07%	2.933251	**	*	0.66%	12.91%	2.70281	**	*	0.71%	15.73%	3.447967	**	*
-2	0.21%	9.28%	1.011052			0.27%	13.18%	1.093728			0.34%	16.07%	1.644686		*
-1	0.67%	9.94%	3.273733	**	*	0.74%	13.92%	3.025166	**	*	0.78%	16.85%	3.800863	**	*
0	0.59%	10.53%	2.883932	**	*	0.41%	14.33%	1.671854		*	0.70%	17.56%	3.409269	**	*
1	0.41%	10.94%	2.005504		*	0.44%	14.77%	1.801225		*	0.50%	18.06%	2.450978	**	*
2	0.13%	11.06%	0.627558			0.10%	14.88%	0.412499			0.16%	18.22%	0.764756		
3	-0.29%	10.77%	-1.42785			-0.28%	14.60%	-1.13761			-0.19%	18.03%	-0.93923		
4	-0.10%	10.68%	-0.4718			-0.10%	14.50%	-0.39			0.06%	18.09%	0.296595		
5	-0.39%	10.29%	-1.89369			-0.36%	14.14%	-1.45706			-0.34%	17.74%	-1.66486		
6	-0.17%	10.13%	-0.81145			-0.23%	13.91%	-0.93591			-0.02%	17.72%	-0.09225		
7	-0.45%	9.68%	-2.2142			-0.41%	13.50%	-1.68297			-0.30%	17.42%	-1.45917		
8	-0.14%	9.54%	-0.67037			-0.29%	13.22%	-1.16521			0.01%	17.43%	0.043647		
9	0.32%	9.87%	1.595864			0.38%	13.60%	1.553302			0.44%	17.87%	2.124079		*
10	-0.35%	9.52%	-1.69842			-0.45%	13.14%	-1.85151			-0.23%	17.64%	-1.10986		
11	0.07%	9.59%	0.326757			-0.04%	13.11%	-0.147			0.19%	17.83%	0.930792		
12	0.22%	9.81%	1.105388			0.14%	13.25%	0.576161			0.33%	18.16%	1.585216		
13	0.09%	9.90%	0.422247			0.05%	13.29%	0.187182			0.18%	18.34%	0.872177		
14	0.09%	9.99%	0.460857			0.36%	13.65%	1.465988			0.24%	18.58%	1.141443		
15	-0.04%	9.95%	-0.17943			0.10%	13.75%	0.393194			0.11%	18.68%	0.513391		
16	-0.20%	9.76%	-0.97442			-0.09%	13.66%	-0.36363			-0.13%	18.56%	-0.6087		
17	0.30%	10.05%	1.466824			0.19%	13.85%	0.787395			0.34%	18.90%	1.653349		*
18	-0.14%	9.91%	-0.68777			0.00%	13.86%	0.00425			-0.02%	18.87%	-0.11438		
19	0.05%	9.97%	0.270189			0.05%	13.90%	0.192694			0.16%	19.04%	0.789284		
20	0.02%	9.99%	0.082167			-0.16%	13.74%	-0.67303			0.05%	19.09%	0.263114		
21	-0.14%	9.85%	-0.69046			-0.21%	13.52%	-0.86846			-0.01%	19.08%	-0.05739		
22	-0.36%	9.49%	-1.74764			-0.37%	13.16%	-1.50239			-0.22%	18.86%	-1.07878		
23	-0.11%	9.38%	-0.55656			-0.17%	12.98%	-0.70846			-0.01%	18.85%	-0.03527		

Table 4.5.1a Average Abnormal Returns (Day-60 to Day+60) *(Cont.)*

	Market Model				Mean Adjusted Return Model				Market Adjusted Return Model			
Event Day	**AAR**	**CAAR**	**t values**	**Sig.**	**AAR**	**CAAR**	**t values**	**Sig.**	**AAR**	**CAAR**	**t values**	**Sig.**
24	0.18%	9.55%	0.868462		0.31%	13.29%	1.267086		0.27%	19.11%	1.293368	
25	-0.05%	9.50%	-0.26857		0.07%	13.36%	0.272908		0.04%	19.15%	0.182435	
26	-0.39%	9.11%	-1.92096		-0.28%	13.08%	-1.14262		-0.28%	18.88%	-1.33876	
27	-0.13%	8.98%	-0.63348		0.06%	13.14%	0.239595		-0.03%	18.84%	-0.15133	
28	0.15%	9.13%	0.753426		0.25%	13.39%	1.011995		0.22%	19.06%	1.054878	
29	0.26%	9.40%	1.29183		0.45%	13.84%	1.832618	*	0.34%	19.40%	1.627666	
30	0.12%	9.52%	0.60198		0.10%	13.94%	0.412287		0.29%	19.69%	1.410812	
31	-0.30%	9.22%	-1.48541		-0.31%	13.63%	-1.2472		-0.19%	19.49%	-0.94401	
32	-0.21%	9.01%	-1.03108		-0.25%	13.38%	-1.01921		-0.12%	19.37%	-0.58107	
33	-0.37%	8.64%	-1.81241		-0.31%	13.07%	-1.2582		-0.21%	19.17%	-1.00913	
34	0.08%	8.71%	0.377596		0.15%	13.23%	0.631114		0.19%	19.35%	0.898688	
35	0.01%	8.73%	0.061894		-0.08%	13.15%	-0.31744		0.12%	19.47%	0.586706	
36	-0.10%	8.63%	-0.47999		-0.33%	12.82%	-1.35339		0.03%	19.50%	0.139833	
37	-0.21%	8.42%	-1.0088		-0.21%	12.61%	-0.8459		-0.10%	19.40%	-0.46578	
38	-0.09%	8.33%	-0.45498		-0.13%	12.48%	-0.52555		0.00%	19.40%	-0.01411	
39	-0.09%	8.24%	-0.45962		-0.03%	12.45%	-0.14042		-0.02%	19.38%	-0.11528	
40	0.36%	8.59%	1.749721	*	0.36%	12.81%	1.47169		0.45%	19.83%	2.204098	*
41	0.00%	8.60%	0.013324		0.15%	12.96%	0.610079		0.12%	19.95%	0.582431	
42	-0.51%	8.09%	-2.48231		-0.27%	12.69%	-1.10166		-0.39%	19.56%	-1.90671	
43	0.29%	8.38%	1.405959		0.34%	13.03%	1.384907		0.38%	19.94%	1.855051	*
44	-0.10%	8.28%	-0.48384		-0.09%	12.94%	-0.37412		-0.02%	19.92%	-0.10258	
45	-0.10%	8.18%	-0.47929		0.11%	13.05%	0.460515		0.00%	19.92%	-0.02006	
46	0.05%	8.23%	0.233182		-0.10%	12.95%	-0.39901		0.12%	20.03%	0.562378	
47	-0.06%	8.16%	-0.31387		-0.14%	12.82%	-0.55172		0.03%	20.07%	0.167107	
48	-0.01%	8.16%	-0.04582		-0.02%	12.80%	-0.08089		0.12%	20.19%	0.596782	
49	-0.26%	7.90%	-1.27826		-0.26%	12.54%	-1.05891		-0.16%	20.03%	-0.77745	
50	-0.41%	7.49%	-2.00437		-0.45%	12.08%	-1.84829		-0.30%	19.73%	-1.46301	
51	0.27%	7.75%	1.309556		0.25%	12.33%	1.024198		0.36%	20.09%	1.737199	*

Table 4.5.1a Average Abnormal Returns (Day-60 to Day+60) *(Cont.)*

	Market Model				Mean Adjusted Return Model				Market Adjusted Return Model			
Event Day	**AAR**	**CAAR**	**t values**	**Sig.**	**AAR**	**CAAR**	**t values**	**Sig.**	**AAR**	**CAAR**	**t values**	**Sig.**
52	-0.07%	7.69%	-0.32219		0.04%	12.37%	0.15217		0.05%	20.14%	0.242677	
53	0.01%	7.70%	0.057054		0.05%	12.42%	0.188247		0.11%	20.24%	0.520129	
54	-0.27%	7.43%	-1.3495		-0.05%	12.37%	-0.19083		-0.23%	20.02%	-1.09513	
55	0.08%	7.50%	0.382208		-0.22%	12.15%	-0.88904		0.14%	20.16%	0.694829	
56	-0.07%	7.43%	-0.35867		-0.33%	11.82%	-1.35341		0.07%	20.23%	0.322057	
57	-0.31%	7.12%	-1.53264		-0.20%	11.62%	-0.81281		-0.14%	20.08%	-0.69551	
58	-0.05%	7.07%	-0.23129		-0.24%	11.38%	-0.9905		0.03%	20.11%	0.141347	
59	0.00%	7.07%	-0.00853		-0.07%	11.31%	-0.29266		0.11%	20.22%	0.512516	
60	-0.07%	6.99%	-0.36666		-0.04%	11.27%	-0.14498		0.05%	20.27%	0.263848	

** Significant at 0.01 level
* Significant at 0.05 level

3) this early one-day abnormal return (day-54) is not continued. It is possible that the reason for this early adjustment lies in the data sample itself: it could simply be the effect of certain outliers in the data sample. Given the general volatility in the Chinese stock markets as shown in Chapter 2, a few outliers are expected.

A robustness check has subsequently been carried out regarding the above point 3). The data sample has been screened for outliers, i.e. sharp adjustment in stock prices and daily returns. I will use day -54's figure to illustrate the screening.

First, the mean and standard deviation for all firms' daily returns on day-54 are calculated, hence there are 160 observations. The table below provides descriptive statistics for all firms' returns on day-54. If a particular firm's return on day-54 is 3 standard deviations away from the mean, i.e., it is outside of the mean $\pm$ 3 x standard deviation range, then we consider the possibility that it could be an outlier (a conventional definition).

Table 4.5.1b Descriptive Statistics of Daily Returns of All 160 Firms on Day-54

	160 Firm's Return on Day -54
Mean	0.008050396
Standard Error	0.002845466
Median	0
Mode	0
Standard Deviation	0.035992615
Sample Variance	0.001295468
Kurtosis	1.004840576
Skewness	0.287425435
Range	0.221154771
Minimum	-0.100465116
Maximum	0.120689655
Sum	1.288063309
Count	160
Confidence Level(95.0%)	0.005619785

After the initial round of screening, there appears to be two companies' daily returns that are "distant" from the rest of their peers: 12.07% for company A and -10.05% for company B. Another round of data screening is then carried out. First, company A's all daily returns throughout day-250 to day+250 are examined to see if 12.07% is also an "extreme" return at company level - There might be a chance that this particular company just happens to constantly deliver higher daily returns. Mean and standard deviations are calculated for all 501 observations (day-250 to day +250) and it is found that this 12.07% return is outside of the mean $\pm$ 3 x standard deviation range as well. Exact procedures have been followed regarding company B's daily returns and it is confirmed that -10.05% is also an outlier at company level. Before further actions are to be considered, however, it is important to understand the nature of these "outliers" and their possible impacts on the empirical analysis for there are reasons why these two values should not be treated as outliers.

Chinese stock markets are volatile and share prices are known to be moving up and down more sharply compared to developed markets. [191] Two returns in this case, 12.07% and -10.05%, may be "extreme" but perhaps they truly reflect the reality of the Chinese stock market. More importantly, on this specific day -54, two extreme returns seem to be offsetting each other and when they are averaged across 160 firms, the impact these two values have on empirical results should be small. It is true that outliers by definition are observations "numerically" distant from the rest of the data, but one should be cautious in identifying the outliers in this case, especially considering the unique data set we might be dealing with.

[191] See section 2.3.1.

Similar screenings have been carried out for day-51, -49, -48, -38, -36, -32, -13, -12 and -9 respectively, and there are altogether 21 observations being numerically and marginally distant from the rest of the data.

Outliers' potential impacts on empirical modelling and interpretation should be noted. An extreme outlier in the estimation period will increase the estimation errors in the model and the standard deviation will be larger than it should have been. T-values thus can become too small. As a result, one might tend not to reject the null hypothesis when one should have. Similarly, significant outliers in the event window can cause wrong conclusions to be drawn.

Finally, it is worth pointing out that if an outlier is identified, the conventional ways to treat it are either to exclude it from the sample or to replace it with a proxy, in this case, the boundary of the identification range: mean + 3 x standard deviation or mean – 3 x standard deviation. However, due to the argument and considerations presented no action is taken to omit or trim these observations.

Figure 4.5.1a, 4.5.1b and 4.5.1c provide a graphic representation of the average abnormal returns of all firms from the three models over a 121-day period centred on the event date. Figure 4.5.1d is a graphic representation of the cumulative average abnormal returns for the same period from the three models.

Figure 4.5.1a Market Model AAR for All Firms Over Day-60 to Day+60

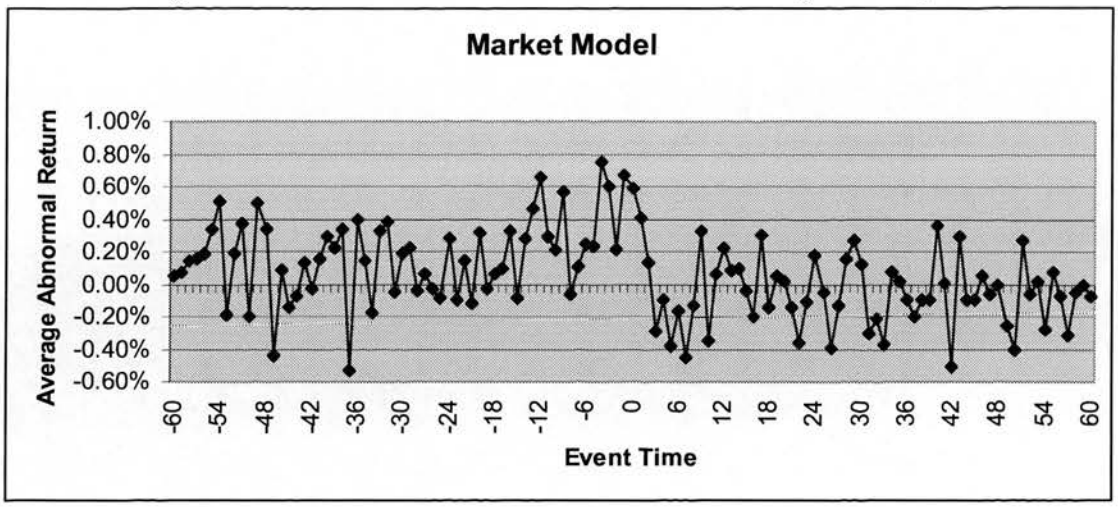


Figure 4.5.1b Mean Adjusted Model AAR for All Firms Over Day-60 to Day+60

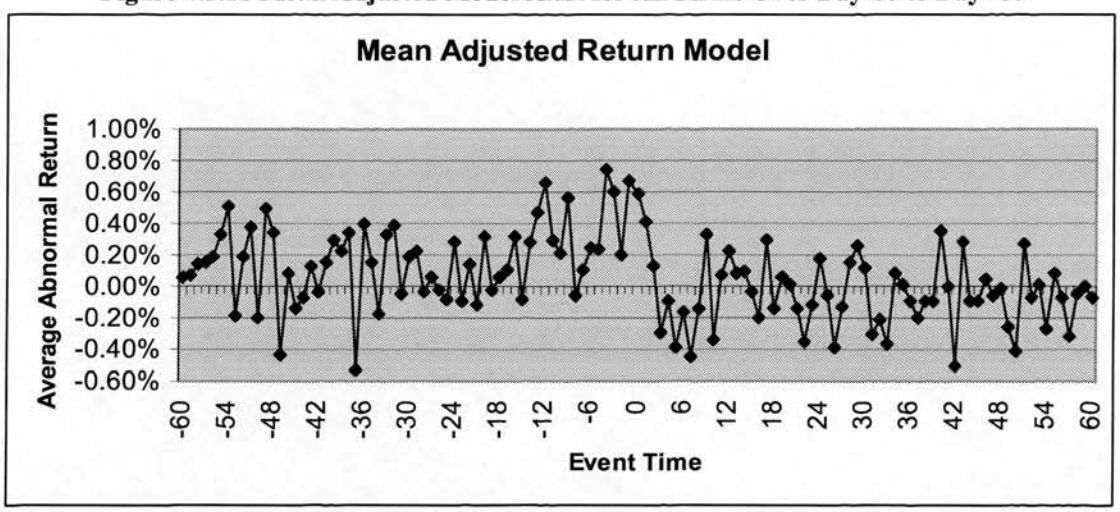


Figure 4.5.1c Market Adjusted Model AAR for All Firms Over Day-60 to Day+60

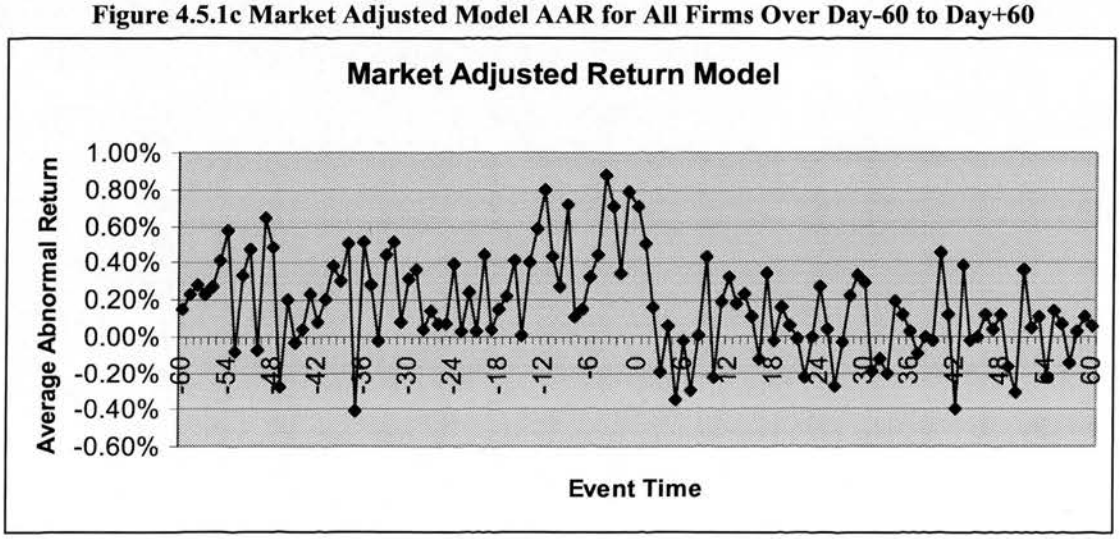
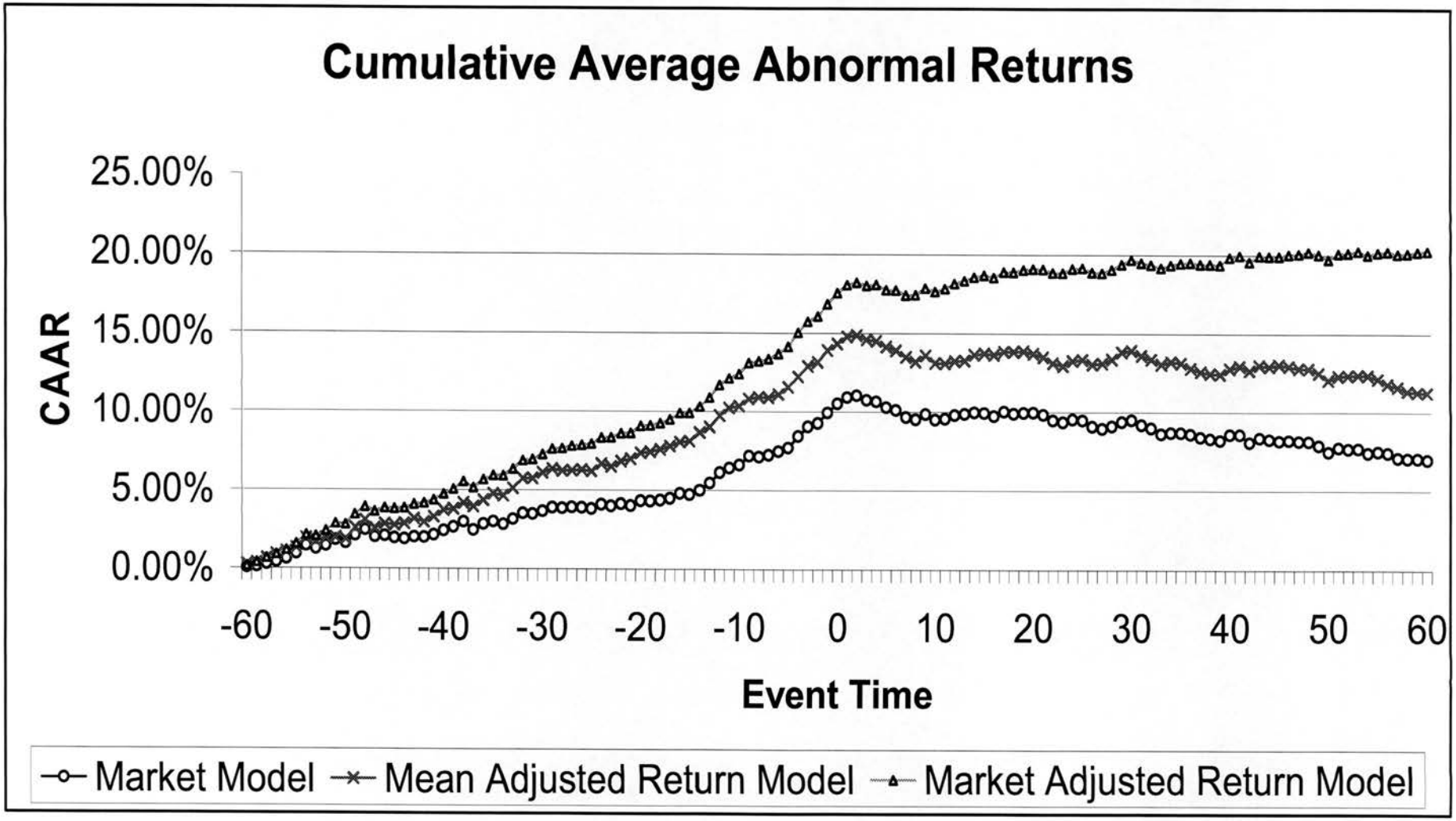


Figure 4.5.1d CAARs for All Firms Over Day-60 to Day+60



All three models identify significant positive average abnormal returns in the immediate days before the event date, day-4, -3 and -1, at 0.05 level. It appears that the market was adjusting quickly to the forthcoming event, although there may be short-term information leakage, which is well documented. Many studies have shown that a large proportion of abnormal stock market reaction is detected prior to the actual announcement owing to tradings by insiders, for instance, around the announcements of dividends (Aharony and Swary 1980), around the announcements of takeovers (Eyssell and Arshadi 1993, etc.) or around earnings announcements (Su, 2003).

It is noteworthy, however, that the positive abnormal returns continued into the event day 0 and day 1: 0.59% and 0.41%, respectively, as identified by the Market Model, significant at 0.05 level. While these positive abnormal returns are statistically significant, their economic significance may be limited. There are a few possible explanations towards these abnormal returns. One of them is that it indicates that the market continues to adjust upon learning the announcement. A much simpler reason could be that if an announcement was made after the market closes on any particular day, the market would not be able to react till the following day – however our data does not allow us to further pinpoint the announcement time in the announcement day.

In clear contrast, there is no significant (at 0.05 level) abnormal returns being identified in the immediate post-announcement period, from day 2 till day 39. This could be interpreted that once news reaches the general public, announcements of acquisitions of control convey no new information. This may provide supporting evidence that the Chinese stock markets are semi-strong efficient. However, as fully

noted throughout the thesis, one should be cautious interpreting these results given a young and immature market.

In summary, the empirical results indicate that the Chinese A share market seems able to correctly anticipate new information relating to the announcements regarding transfers of control before they are announced to the public. There may be signs of information leakage which could ultimately be used to make small positive abnormal returns around event day.

4.5.2. Value Creation

Table 4.5.2a below presents a list of Cumulative Average Abnormal Returns (CAARs) based on seven different event windows. Day-60 to day+60; day-20 to day+20, day-10 to day+10, day-5 to day+5, day-1 to day+1 and day-1 to day 0. T-statistic values are also included for the relevant figures. CAARs calculated from all three models are presented.

As Table 4.5.2a shows, significant positive CAARs are identified for all event windows. For example, using the Market Model, Cumulative Average Abnormal Returns were 6.99%, 5.95%, 3.10%, 2.80%, 1.66%, 1.25% and 0.59% for different event windows, respectively. The results suggest that the market anticipates these corporate restructuring activities as "value-adding" and M&As bring benefits to the shareholders of targeted firms. Although the potential information leakage and insider trading may well be part of the nature of the market.

Table 4.5.2a CAARs for All Firms Over Different Event Windows

	Market Model				Mean Adjusted Return Model				Market Adjusted Return Model			
Event Window	Days	CAAR	t values	sig	Days	CAAR	t values	sig	Days	CAAR	t values	Sig
-60 - +60	121	6.99%	3.125053	** *	121	11.27%	4.179779	** *	121	20.27%	8.947021	** *
-20 - +20	41	5.95%	4.568099	** *	41	6.74%	4.296049	** *	41	10.44%	7.91806	** *
-10 - +10	21	3.10%	3.319357	** *	21	2.90%	2.583053	** *	21	5.51%	5.835371	** *
-5 - +5	11	2.80%	4.152441	** *	11	3.02%	3.709191	** *	11	4.04%	5.915816	** *
-1 - +1	3	1.66%	4.713007	** *	3	1.59%	3.751763	** *	3	1.99%	5.577845	** *
-1 - 0	2	1.25%	4.354126	** *	2	1.15%	3.321294	** *	2	1.49%	5.098333	** *

** Significant at 0.01 level
* Significant at 0.05 level

There are, however, three issues that need to be clarified before any formal conclusion can be drawn.

1. Outliers: As explained earlier, since all 160 samples were examined as a whole group, it is possible that certain outliers may cause undesired effect and make the results biased.

2. Changes in market risk: The market risk for a company may shift during the periods when it is undergoing fundamental changes such as M&A activities. Since the event study used in this chapter estimates beta from day-250 to day-61 and assumes that the beta remains unchanged during the event period, the CAARs generated might not be the correct proxy of companies' market risks. It is perhaps helpful to investigate the variations in the companies' market risks in a pre- and post- event period.

3. Pre and Post-event returns: The results in Table 4.5.2a are generated from event windows centred on day 0 and it is evident that M&As are "value-adding" in Chinese A shares markets – the shareholders of the targeted firms gain from such activities. However, Table 4.5.2a does not examine the pre-announcement returns separately from the post-announcement returns. Such a comparison would give more insights into the value creation for shareholders of the targeted firms, and perhaps would also help to explain if the announcements convey new information to the market once they are released to the public.

Table 4.5.2b extends the above points 2) and 3) and presents a comparison of pre- and post-event CAARs and their t values.

Table 4.5.2b CAARs for All Firms Over Pre- and Post-Event Windows

	Market Model				Mean Adjusted Return Model				Market Adjusted Return Model			
Event Window	Days	CAAR	t values	sig	Days	CAAR	t values	sig	Days	CAAR	t values	sig
-60 - -1	60	9.94%	6.307633	** *	60	13.92%	7.332135	** *	60	16.85%	10.56319	** *
+1 - +60	60	-3.53%	-2.24208	*	60	-3.06%	-1.61229		60	2.72%	1.702286	
-20 - -1	20	5.79%	6.491801	** *	20	7.09%	6.320544	** *	20	8.24%	8.910883	** *
+1 - +20	20	-0.54%	-0.59615		20	-0.60%	-0.54338		20	1.53%	1.663718	
-10 - -1	10	3.52%	5.466354	** *	10	3.68%	4.749247	** *	10	4.72%	7.247017	** *
+1 - +10	10	-1.01%	-1.56813		10	-1.19%	-1.53473		10	0.09%	0.131133	
-5 - -1	5	2.45%	5.388225	** *	5	2.80%	5.098722	** *	5	3.15%	6.843726	** *
+1 - +5	5	-0.24%	-0.51889		5	-0.19%	-0.34478		5	0.19%	0.406176	

** Significant at 0.01 level
* Significant at 0.05 level

As shown from Table 4.5.2b, there is a clear difference between pre-event and post-event CAARs. All three models identify significant positive abnormal returns in pre-event windows: day-60 to day-1, day-20 to day-1, day-10 to day-1 and day-5 to day-1. Both the Market Model and the Mean adjusted Return Model identify negative CAARs in the event window immediately after the announcement, although the majority of these negative CAARs are not statistically significant (only one significant -3.53% for day+1 to day+60). These results show that the shareholders of the target firms gain prior to the M&As' announcements. As soon as the news was released to the public, M&A activities announcements convey no new information.

If the market is at least semi-efficient, and assuming that the data is not biased and the estimated companies' beta is an appropriate proxy of companies' market risk during the period of concern, then positive abnormal returns are generated by acquisitions of control. Shareholders of "targeted" firms benefit from such activities. The behavioural hypothesis that the announcement creates no positive abnormal return is therefore supported. Information leakage prior to the announcement has already been reflected in a positive abnormal return. The information discerned by investors that an acquisition of control is likely to take place has resulted in positive abnormal returns.

4.6 Conclusion

There are many theories in the literature as to why companies attempt M&As or acquisitions of control. One is the "value maximisation theory", which states that management attempts to maximise shareholder wealth. In line with this reasoning, acquisitions performed by a company are viewed as being made with the purpose of increasing the company's stock value. This value creation may come from productive

as well as non-productive sources. Another reason why firms attempt acquisition of control is the "growth maximisation theory", which states that after fulfilling a certain profitability level, a company's managers will strive to further their own ends rather than working to benefit shareholder wealth.

Numerous studies have documented that M&A activities creates value for the shareholders of target firms. This chapter extends this line of research into the Chinese context.

Using a sample of 160 legal-person share transactions involving listed companies between 1996 and 2000, and their announcement dates, hence a unique event, a joint hypothesis was tested in this chapter. The empirical results indicate that the Chinese A share market seems able to correctly anticipate new information relating to the announcements before they are announced to the public. There may be however signs of information leakage which could ultimately be used to make small positive abnormal returns around event day.

Further empirical tests were carried out to examine whether acquisitions of control (via legal-person share transactions, a major forms of M&As in China) create value for the target firms' A share shareholders. It is further concluded that the shareholders of the targeted firms benefit from such activities in China.

There are two parts in the joint hypothesis: the test of the EMH and that the announcement does not give target shareholders gains from M&As or acquisition of control.

The first part of the hypothesis is not rejected, as the market's reaction does not seem to be inconsistent with market efficiency. However, leakages of information and/or insider trading prior to the announcement could well cause such reaction. Therefore, I can not conclude definitely that the Chinese A share stock market is semi-strong efficient. This study does suggest however that Chinese A share markets are somewhat informationally efficient for there are no abnormal returns identified post-event. This indicates that the market was able to adjust fairly quickly upon learning the information contained in the announcement and once the announcement is made public, it conveys no new information. Therefore, the changes in share prices reflect changes in the expected future profit and dividend streams – new information contained within the announcement.

The second part of the hypothesis is supported as the evidence from this chapter shows that positive abnormal returns are indeed created for target firms prior to the announcement. However, the information revealed does not result in abnormal returns being created for target firms' shareholders.

Empirical event study methodology was used in this chapter to test a basic but fundamental joint hypothesis. As clearly stated in previous sections, the results were not without their limitations. Apart from those mentioned, there are additional and perhaps more important issues that remain un-answered and need to be further tested, such as the motivations, size effects, geographic correlations, ownership/privatisation (or partial privatisation) issues, etc. These detailed studies would help to gain a clearer understanding of Chinese stock market. That, would be the goal of next Chapter.

Chapter 5 Further Analysis of Abnormal Returns

5.0 Introduction

In Chapter 4 a joint hypothesis concerning the EMH and the effects of merger announcements on abnormal returns was examined using a sample of 160 listed companies' legal-person share transactions between 1996 and 2000. It was found that overall the shareholders of the targeted firms benefit from such acquisitions of corporate control in China. The findings are consistent with the previous M&A literature in the West, which generally conclude that target firm shareholders enjoy significantly positive returns around the announcements in almost all cases (Jensen and Ruback (1983), Datta et al. (1992) and Bruner (2002)).

Being a relatively young player in the global capital market, Chinese securities markets share some common characteristics with other emerging markets as outlined before – a relatively shorter history, stricter capital control policy, less well-developed legal framework, frequently modified regulations, and last but not least, inexperienced investors. In addition Chinese stock markets are unique for being the only stock markets in a socialist state: The markets are dominated by SOEs which have complicated mixed share structures. Only approximately 30 per cent of listed companies' total shares are traded on the markets. Legal-person shares can only be traded among "legal-person"s, etc. It is perhaps because of this immature nature and

special characteristics, that empirical results obtained using data from such transitional markets need to be interpreted carefully.

Whilst not many empirical studies have been conducted regarding M&As or acquisitions of control in China, the findings presented in Chapter 4 are consistent with those of the previous Chinese research (Zhang 2003; Shi 2002, Tan 1998). However, as noted in Chapter 3, these studies have their limitations, both methodological and analytical. Compared to previous research, this study uses more up-to-date data and a more clearly defined event. In addition, Chapter 5 will further contribute to the literature by looking into different explanatory factors, which may have different impacts on the impacts of M&As or acquisitions of control. The targets in the data sample are divided into sub-groups according to different characteristics they bear and comparisons are made in order to gain a better understanding of the M&As in China. These in-depth comparisons, give a clearer picture of the motivations and effects of M&As in China than has previously been possible.

While empirical researches conducted in more mature markets were normally supported by well-developed financial theories and economic models which originated from these Western markets and economies, research regarding Chinese financial markets has tended not to be backed by established theories developed specifically in the Chinese socialism context. In this research the explanatory variables are selected based on both research findings from the West and the theoretical arguments concerning the unique characteristics of the Chinese securities markets. Seven explanatory variables are identified and they are "location," "industry

effect," "time line," "firm sizes," "A Share proportion," "voting power" and "previous performance."

Detailed analysis of cumulative average abnormal returns (CAARs) associated with different variables reveals that some variables such as "previous performance" and "voting power" appear to be of more explanatory power than variables such as "firm sizes," "A Share proportion," etc. It is found that not all targets shareholders gain from acquisitions of control in China. The market anticipates certain acquisitions to be more "value-adding" than others.

The rest of the chapter is organised as follows. The next section reviews seven explanatory variables. Section 5.2 describes the data and proposes the statistical hypotheses. Section 5.3 presents the empirical results and their interpretations and section 5.4 summarises the chapter.

5.1 Explanatory Variables

This section describes the explanatory variables that may have impacts on the stock returns around the announcements of acquisitions of control in China. Seven explanatory variables are identified: "location," "industry effect," "time line," "firm sizes," "A Share proportion," "voting power" and "previous performance."

5.1.1 Location

The first explanatory variable is the location where the target firms are listed, namely, the Shanghai Stock Exchange (SHSE) or the Shenzhen Stock Exchange (SZSE) – a company can choose to list on either one of the two exchanges but not on both. It is not uncommon for a country to have more than one stock exchange. However, contrary to the global trend of merging multi exchanges of a single jurisdiction into a single-exchange structure, China currently has two stock markets that are performing virtually the same functions in every aspect[125].

While most companies listed on the SHSE tend to be larger and more manufactory-oriented, those on the SZSE are smaller and more export-oriented. Two markets therefore might attract different types of investors in terms of the levels of risk they are willing to take. This leads to the assertion that the announcement of a merger or acquisition may be perceived differently by the two markets, hence, different share price movement.

However, given the immature nature of the Chinese securities markets and the less experienced (and perhaps less rational) individual domestic investors, the above assertion may well not be true. If the two stock exchanges are designed to, and are, serving the same function, then it would be logical to expect a matching pattern in terms of share price adjustment in different markets. Abnormal returns, if they exist, should be no different between the two markets.

[125] They differ slightly in a few technical operational trivia.

5.1.2 Industry Effect

During the study period, listed companies were classified into six categories according the natures of their primary businesses, namely Industrial, Commercial, Real Estate, Utilities, Financial and Miscellaneous.

Ever since China shifted its attention from the agricultural reform in rural areas to the industrial reform in urban areas from the mid-80s, stated owned *industrial* enterprise modernisation has always been near the top of the government's agenda. Given the fact that the state owned section suffered most in terms of deficit, priority has been given to them to list on the stock markets, so that they could raise much needed capital for their reform. It is therefore not surprising to see that the majority of listed firms are under Industrial category. For example, there were 484 firms listed on the Shanghai Stock Exchange by the middle of 2000, 289 of which were classified as Industrial – a dominant 59.71%. This dominance has also been reflected in the sample studied: 97 out 160 (60.63%) targets were Industrial.

It has been reported that there is some degree of performance difference between industries (Montgomery and Wernerfelt (1988); Rumelt (1991)). Such performance difference may well have an impact on the share returns during corporate restructuring activities. Therefore, it is desirable for this chapter to differentiate the sample into Industrial and non-Industrial groups so that the performance difference between the two groups could be assessed. Industry effect has been chosen as the second explanatory variable.

5.1.3 Time Line

The Interim Provisions on the Management of the Issuing and Trading of Stocks (Interim Provisions) issued by the State Council on 22 April 1993 for a long time served as a nationwide securities regulation. With merely nine chapters and 84 articles, the Interim Provisions were not complex and far from being complete. Chapter 4 of the Interim Provisions does not allow any domestic "natural-person" to hold more than 0.5% of the shares in a listed company. It further states that a listed company can only be taken over by bid[126] and the threshold is 30%.[127] It however did not specify how state shares or legal-person shares should be traded and what procedures should be followed. In terms of information disclosure, Article 60 implies that, under certain circumstances, a listed company may be exempted from disclosing a major corporate event promptly if approved by the Chinese Securities Regulatory Commission (CSRC) and the stock exchanges.

The Corporate Law, promulgated by the National People's Congress on 29 December 1993 and effective from 1 July 1994, was the first national law governing corporate enterprises. Althogh it included some provisions on share transfer and mergers, it did not cover state-owned shares transactions in detail either. Article 147 allows legal-person shares to be assigned after a period of three years commencing from the date of the company's establishment, but Article 148 further states that the approval and regulatory measures for such assignment or purchase shall be "*separately prescribed by the relevant national statutes or administrative regulations.*"[128] However, these

[126] Taking over by agreement was further permitted by the Securities Law, 1999.
[127] Given the conditions of Chinese securities markets, taking over a listed company by purchasing its circulating A shares over the secondary market is both time-consuming and expensive. For a more detailed description, please refer to Chapter 2.
[128] Section 2, Chapter 4, The Corporate Law.

"relevant" statutes or regulations were not specified, hence they referred to the vast amount of regulations/interim provisions/provisional measurements issued by various governing entities. These entities range from the state council, the People's Bank of China (PBC) and the Ministry of Finance (MOF) to local governmental departments.

The Interim Provisions and the Corporate Law mentioned above, along with other provisional regulations[129] form the initial legal framework governing the Chinese securities market. However, their regulatory power was limited due to the lack of a national securities law.

The promulgation of the Securities Law was therefore seen as a milestone in the development of securities market in China. The Securities Law was passed by the People's Congress on 29 December, 1998 and went into effect on 1 July,1999. Compared to the Interim Provisions and the Corporate Law, which were drafted and issued in a relatively short time period and subsequently criticised for being not comprehensive and considerate, it took over 5 years before the final draft of Securities Law was submitted for approval. Many legal improvements were indeed brought in by it, as discussed in Chapter 2.

Although it failed yet again to address state-owned share trading issues properly, the Securities Law defines plans of merger or acquisition as "inside information" and requires such information, as well as any information regarding major corporate restructuring activities, to be disclosed to the general public through pointed channels

[129] Over 100 national/local regulations (Ma 2003) were issued between 1993 and 1998, all having certain direct jurisdiction power over the Chinese securities markets.

promptly.[130] This regulatory change is of particular interest for this research. Because Article 60 from The Interim Provisions essentially indicates that markets may not necessarily be aware of M&A activities as the concerned targets may be exempted from disclosing such information promptly, this regulatory change ensures that such news will have to be disclosed, and disclosed promptly. The Securities Law will have an impact on the sample studied in this research.

The date, 1 July 1999, when the Securities Law became effective is therefore chosen as a criterion to divide the sample into two sub-groups. The pre-1 July 1999 acquisitions of control announcement effects are examined against those post-1 July 1999 results to help gain an understanding of the impacts that the Securities Law brought into the Chinese stock markets.

5.1.4 Firm Size

The positive effect of target size on the stock returns of the acquiring firm is well documented and supported by the findings of many previous studies (Moeller, Schlingemann and Stulz (2004)). If the target firms are a material proportion of the worth of the acquirer, such acquisitions of control tend to result in greater wealth gains. It implies that the announcement of an acquisition for a smaller target may convey different information to capital market participants compared with acquisition announcements for larger targets. Anderson, Haynes and Heaney (1994) find that small targets appear to earn greater abnormal returns around the time of announcement of a takeover offer than large firms.

[130] Article 69, Chapter III, the Securities Law.

Whether acquisitions of smaller targets create more value in China may be tested using the available data set. However, certain assumptions need to be made before proceeding.

"The *relative* size of acquisition" used in the previous studies is normally defined as a ratio of transaction value divided by the market value of the acquiring firm. Since the market values of the Chinese acquiring firms cannot be obtained, given the fact that virtually all acquirers are non-listed companies, a conventional relative ratio cannot be obtained, hence, a proxy needs to be used instead.

Two proxies were initially considered: 1) the value of a transaction, measured by the number of legal-person shares involved times the price agreed per share[131]; and 2) the value of a target, measured by the book value of the total assets of a target firm. Due to the lack of documentation on how the acquiring prices were agreed on[132], the values of such transactions may be a poor estimate of the target size. The second proxy was therefore chosen as the fourth variable. Limitations of using this proxy, however, should be noted. Whereas the Western research conventionally use "relative" size, i.e. target size compared to acquirer size, the proxy used in this research is an "absolute" size, i.e. the absolute size of the target in terms of the total assets' value. This may indeed lead to unexpected results.

[131] Note that it is not the market price of targets' tradable shares.
[132] Although in practice, net value of assets was used as an indicator, the pricing of state-owned shares remained a maze.

The data sample was divided into two sub-groups using the median of the absolute sizes of the target firms, measured by the book value of the total assets which was provided in the annual reports preceding the event dates.

5.1.5 A Share Proportion

The fifth explanatory variable is the percentage of A shares which are measured by the ratio of the number of A shares divided by the total number of shares outstanding of the target firm prior to the announcement. This variable has two possible implications.

First, it is an indicator of the number of retail individual shareholders of a target. due to severe regulations during the period studied, a retail individual A share investor seldom holds more than 0.5 percent of any listed company's A shares. Since the majority of the investors in the Chinese A share markets are retail investors[133], the percentage of tradable A shares of a listed company can be seen as a proxy for the number of small shareholders. That is, if a firm has a higher percentage of A shares, it is generally safe to estimate that this firm has more small individual retail shareholders in its shareholder structure than a firm with a lower percentage of A shares.

Given the fact that the retail investors in China are relatively inexperienced compared to their Western counterparts, it is expected that individual Chinese investors may buy

[133] By the end of 1999, for instance, the number of A shares account for an average of 30% of all shares. An estimated 25% were held by retail investors; 5% by institutional investors. (source: China Securities Outlook, Sept. 2000) Also please refer to Table 2.2.2.

or sell in an irrational manner especially when the arrival of new information does not reach them promptly and/or when the information is not interpreted correctly. In addition, information disclosure procedures were not regulated clearly during the studied period, resulting in the possibility that public information may not be completely "public" after all.

Second, the A share proportion indicates the level of privatisation of SOE in China, which is of more importance to this chapter. Privatisation shifts ownership and control of public assets to private investors. However, it is not clear how changes in state ownership affect firm performance. Some economists argue that, in competitive markets, state ownership is perhaps inferior to private ownership (Dewenter and Malatesta (2001)). Some empirical researches have supported that government ownership is less efficient than private ownership. The authors also report that the evidence on profitability improvement subsequent to privatisation is mixed. In contrast, studies such as Kole and Mulherin's (1997) suggest that government ownership is not necessarily less efficient than private ownership.

Like many governments, the Chinese government uses privatisation as an important means to strengthen SOEs in China. Due to the experimental nature of the reform, the Chinese government has been very careful and has proceeded cautiously in the privatisation process. In fact, the official term used in China is not "privatisation" but "share ownership scheme". Additionally it should be noticed that there is not even a single SOE which has been completely privatised so far.

Sun et al. (2003), using regression analysis, suggested that partial government ownership has a positive impact on SOE performance in China. Further investigation by the authors showed that "*the relationship between government ownership and firm performance follows an inverted U-shape pattern. A certain level of government ownership seems 'optimal'.*"[134]

The A share percentage of a listed company is a very good indicator of the level of privatization of a Chinese SOE. A higher percentage of A Shares would mean a higher degree of partial privatisation and *vice versa*. It would be desirable to see what the impacts are of different degrees of partial privatisation on anticipated firm performance, during event periods such as those around the announcement of an acquisition of control.

5.1.6 Voting Power

A shareholder's ability to affect a company's activities, his voting power, is normally proportional to his degree of ownership. Legal-person shareholders in China, however, effectively enjoy a higher percentage in voting power with a relatively lower but controlling percentage of equities. This is due to the unique share structure of Chinese listed companies, and the fact that virtually no individual A-share shareholder takes part in companies' management.[135]

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[134] Sun et al. (2003)

[135] Because of 1) any individual investor were not allowed to hold more than 0.5% of a listed company's shares - set by the Interim Provisions although later dropped by the Securities Law, and 2) the short-term speculating behaviour in the Chinese A share markets. Also please refer to Chapter 2.

Major shareholders are more likely to be appointed to the board of directors and have influence over management selection as well as to have access to inside information. Jensen and Meckling (1976) asserted that the controlling shareholder might "make" the management run the company in the best interest of the controlling shareholder even if it would harm the minority.

DeAngelo and DeAngelo (1985) looked at the managerial ownership of companies with dual classes of stock. In their sample of 45 firms, the insiders owned almost 57 percent of the stock conferring voting power, but only 24 percent of the equity. They also studied 4 cases where the class of share with the highest voting power received "substantial acquisition premiums". Megginson's (1990) study based on UK data revealed similar results: in 37 out of 43 bids for companies with dual classes of common stock, the share with the highest voting power received the highest premium. Stulz, Walking and Song (1990) studied the target ownership structure in successful tender offers and found that it played an important part in the total takeover gain - the target shareholders' gain increased with institutional ownership. Whereas the western literature has covered voting power issues well, there has been little research addressing this issue in the Chinese context.

In order to examine the effects of voting power in the Chinese context, the sixth variable is defined as the percentage of the involved legal-person shares in the target's total shares. The data sample is then divided into two sub-groups where a higher percentage of legal-person shares involved would be a proxy for higher voting power.

5.1.7 Previous Performance

The last explanatory variable considered in this chapter is the previous performance of a target firm.

One of the prominent motives for takeovers, which has been generally accepted by financial economists, is of a disciplinary nature i.e. to punish those poorly managed – also known as the inefficient management hypothesis. Brealey and Myers (1991) note that "*If this motive is important, one would expect that firms that perform poorly tend to be targets for acquisition.*"[136] Indeed, many empirical tests of this hypothesis attempt to predict the probability of takeover by examining either stock returns prior to acquisition (Franks and Mayer (1996), Agrawal and Jaffe (2003)) or by examining measures of operating performance for targets in the years before acquisition (for instance Hasbrouck (1985) and Lang, Stulz and Walkling (1989)). The results reported from these studies varied. Some presented strong evidence of underperformance (Smiley (1976)) and some found no evidence of abnormal performance at all. (Franks and Mayer (1996); Agrawal and Jaffe (2003)) These mixed results, could simply indicate that takeovers are motivated by many factors and being poorly managed is just one of them, although it remains perhaps an important factor.

Due to both time constraints and limited data availability, it is not the aim of this chapter to attempt to predict the acquisition probability of a listed firm in China. What is of concern here is the impact of a target's previous performance on stock returns during M&As or acquisitions of control. After the government started the enterprise

[136] Brealey and Myers (1991)

reform in urban areas, it was determined to promote a "competitive market-driven" environment for enterprises. This proved to be difficult as the operations of many SOEs were still heavily affected by the government, even after they were listed. As noted in Chapter 2, it was not uncommon for local government to give administrative "orders", requiring legal-person shares to be sold to other legal-persons. If the "order" happens to assign some *underperformed* firms to a *better* management, such a transaction might create value since the market would expect improvement in the target's performance. If, however, a *good* performing firm is "ordered" to sell its legal-person shares, it is logical to expect less or no value creation. A target's performance preceding an acquisition therefore remains a vital explanatory variable of anticipated future performance in Chinese M&As.

Changes in the annual Net Return On Assets ratios (NROA) are used as proxies for company's previous profitability/performance. Two annual NROA ratios were obtained from target firms' annual reports prior to year 0: $NROA_{-2}$ and $NROA_{-1}$, where year 0 was when the event took place. Each target's previous performance is then defined as $NROA_{-1}$ minus $NROA_{-2}$. If the difference is positive, i.e., $NROA_{-1}$ is greater than $NROA_{-2}$, then the target is viewed as good or "recovering" in performance; if the difference is negative, hence, $NROA_{-1}$ is smaller than $NROA_{-2}$, the performance is poor or "declining". This defining method may be simple, but a number of researchers (Chen, 1999) find NROA ratios are accurate in terms of measuring firms' performances especially in the Chinese context, where it has been documented that stock returns may not properly reflect firms' performances due to the immature nature of the Chinese stock markets. It is also worth noting that the Chinese

Securities Regulatory Commission (CSRC) uses the NROA ratio as a basic index to measure a listed firm's performance.

Dividing the data sample into sub-groups according to their previous performance before the event can therefore provide insights into the nature of the incentives behind the Chinese M&As and may also provide an explanation for observed differences in excess returns.

5.1.8 Summary

Section 5.1 described seven explanatory variables for further exploration of abnormal returns for targets' A share shareholders around the announcement of M&As or acquisitions of control in China. These variables, as explained individually, are chosen based on the previous research findings and an analysis of Chinese securities markets' unique characteristics. Detailed description of sub-groups and dividing criteria will be presented in the following section.

5.2 Data and Hypotheses

This section presents statistical descriptions of each pair of sub-samples grouped according to different explanatory variables outlined in Section 5.1. Seven pairs of sub-groups are formed – each pair is to test a specific hypothesis.

After the sub-groups are created, the same methodology as detailed in Chapter 4, Section 4.4, was followed to calculate average abnormal returns (AARs), and

cumulative average abnormal returns (CAARs) are also computed for each sub-group. T-statistic values are computed using equations 4.14 and 4.15.

5.2.1 Location

The locations where the targets are listed: the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE), are identified as a geographic variable. A total sample of 160 targets was then divided into two sub-groups, the Shanghai Group and the Shenzhen Group, as shown in Table 5.2.1 below.

Table 5.2.1 Location Groups

Locations	Shanghai Group	Shenzhen Group
Number of targets	74	86
Percentage	53.75%	46.25%

H_0: The mean abnormal return for target firms listed on the SHSE equals the mean abnormal return for target firms listed on the SZSE.

5.2.2 Industry Effect

Two sub-groups were formed according to their industry type: those that were classified as "Industrial" vs. non-Industrial, as shown in Table 5.2.2 below.

Table 5.2.2 Industry Effect Groups

Industry	Industrial	Non-Industrial
Number of targets	97	63
Percentage	58.13%	41.87%

H_0: The mean abnormal return for target firms classified as Industrial equals the mean abnormal return for target firms classified as non-Industrial.

5.2.3 Time Line

As shown in Table 5.2.3 below, the data sample of 160 firms was divided into two sub-samples based on the announcement dates. If the announcements of M&As were made before 1 July 1999 when the Securities Law became effective, they were classified as Pre-Law; If after, Post-Law.

Table 5.2.3 Time-line Groups

Time Line	Pre-Law	Post-Law
Number of targets	71	89
Percentage	44.38%	55.62%

H_0: The mean abnormal return for target firms acquired before 1 July 1999 equals the mean abnormal return for target firms acquired after 1 July 1999.

5.2.4 Firm Size

The forth variable is measured by the book values of the total assets of the target firms. The median of firm sizes was chosen as the dividing criterion because the size distribution was skewed. If a target's size is greater than the median, it is classified as a "bigger firm", whereas if the size of a target firm is smaller than the median, it is classified as a "smaller firm." Table 5.2.4a and Table 5.2.4b below provide descriptive statistics of firm sizes for all 160 targets.

Table 5.2.4a Firm-size Groups

Firm Size	Bigger Firms	Smaller Firms
Number of targets	80	80
Percentage	50.00%	50.00%

Table 5.2.4b Size Descriptive Statistics

Descriptive Statistics	Firm Size
Count	160
Sum	104112.146
Average	650.701
Median	446.145
Mode	#N/A
Trimmed Mean (0.2)	510.356
Minimum	112.978
Maximum	9625.720
Range	9512.743
Standard Deviation	874.309
Variance	764415.359
Standard Error	69.120
Skewness	7.578
Kurtosis	72.281
Smallest (2)	122.567
Largest (2)	4494.664
1st Percentile	122.863
5th Percentile	191.740
10th Percentile	245.261
25th Percentile	317.030
50th Percentile	446.145
75th Percentile	721.209
90th Percentile	1154.285
95th Percentile	1483.142
99th Percentile	3547.075
Interquartile Range	404.180
t statistic (mean = 0)	9.414
t statistic p-value	0.000
lower 95% c.i.	514.189
upper 95% c.i.	787.213
# of values > 0	160.000
sign test p-value	0.000
Sum of sign ranks (med = 0)	12880
Wilcoxon p-value	0.000

H_0: The mean abnormal return for "Bigger" target firms equals the mean abnormal return for "Smaller" target firms.

5.2.5 A Share Proportion

The median of all targets' A share percentages was used to divide the total sample into two sub-groups: those with a higher A share percentage and those with lower A share

percentage, e.g. Higher A% vs. Lower A%. Table 5.2.5a and 5.2.5b provide descriptive statistics for the fifth explanatory variable.

Table 5.2.5a A Share Proportion Groups

A %	Higher A%	Lower A%
Number of targets	80	80
Percentage	50.00%	50.00%

Table 5.2.5b A% Descriptive Statistics

Descriptive Statistics	A Share %
Count	160
Sum	55.171
Average	0.345
Median	0.321
Mode	0.250
Trimmed Mean (0.2)	0.340
Minimum	0.054
Maximum	0.660
Range	0.605
Standard Deviation	0.118
Variance	0.014
Standard Error	0.009
Skewness	0.340
Kurtosis	-0.014
Smallest (2)	0.062
Largest (2)	0.640
1st Percentile	0.068
5th Percentile	0.174
10th Percentile	0.250
25th Percentile	0.263
50th Percentile	0.321
75th Percentile	0.424
90th Percentile	0.505
95th Percentile	0.557
99th Percentile	0.637
Interquartile Range	0.161
t statistic (mean = 0)	36.923
t statistic p-value	0.000
lower 95% c.i.	0.326
upper 95% c.i.	0.363
# of values > 0	160
sign test p-value	0.000
Sum of sign ranks (med = 0)	12880
Wilcoxon p-value	0.000

H_0: The mean abnormal return for target firms of the "Higher A%" group equals the mean abnormal return for target firms of the "Lower A%" group.

5.2.6 Voting Power

160 targets were divided into two sub-groups according to the percentage of Legal-person shares involved in the transaction. A percentage greater than the median percentage of legal-person shares involved would be a proxy for higher voting power.

Table 5.2.6a Voting-Power Groups

V-Power	Higher Voting Power	Lower Voting Power
Number of targets	80	80
Percentage	50.00%	50.00%

5.2.6b Voting-Power Descriptive Statistics

Descriptive Statistics	V-Power
Count	160
Sum	49.473
Average	0.309
Median	0.281
Mode	(0.28 ; 0.2)
Trimmed Mean (0.2)	0.296
Minimum	0.079
Maximum	0.691
Range	0.612
Standard Deviation	0.119
Variance	0.014
Standard Error	0.009
Skewness	1.065
Kurtosis	0.968
Smallest (2)	0.081
Largest (2)	0.684
1st Percentile	0.106
5th Percentile	0.173
10th Percentile	0.192
25th Percentile	0.232
50th Percentile	0.281
75th Percentile	0.364
90th Percentile	0.510
95th Percentile	0.532
99th Percentile	0.682
Interquartile Range	0.132
t statistic (mean = 0)	32.755
t statistic p-value	0.000
lower 95% c.i.	0.291
upper 95% c.i.	0.328
# of values > 0	160
sign test p-value	0.000
Sum of sign ranks (med = 0)	12880
Wilcoxon p-value	0.000

Table 5.2.6a and 5.2.6b above provided descriptive statistics for the Higher Voting Power group and the Lower Voting Power group.

H_0: The mean abnormal return for target firms of the "Higher Voting-power" group equals the mean abnormal return for target firms of the "Lower Voting-power" group.

5.2.7 Previous Performance

If $NROA_{-1}$ is greater than $NROA_{-2}$ for any target, that indicates that the target's profitability/performance is improving, hence, $NROA_{-1} - NROA_{-2} > 0$. If however, $NROA_{-1} - NROA_{-2} <= 0$, the target's performance can be viewed as declining or non-improving. Accordingly two sub-groups were formed: Previous Target Performance + (improving) vs. Previous Target Performance – (declining) as shown in Table 5.2.7 below.

Table 5.2.7 Previous Performance Group

Performance	Previous Performance +	Previous Performance –
Number of targets	54	106
Percentage	33.75%	66.25%

H_0: The mean abnormal return for target firms with an improving performance history equals the mean abnormal return for target firms with a declining or non-improving performance history.

After seven explanatory variables were identified and described, the following section presents detailed empirical results and the interpretations.

5.3 Empirical Results and Analysis[137]

The total sample of 160 targets is divided into seven pairs of sub-groups according to the criteria specified above. Following the same event study technique described in Chapter 4, a comprehensive comparison is then conducted between each pair of sub-groups. In this section,

Four sets of tables are presented for each pair of sub-groups. Tables coded "...a" list the daily average abnormal returns (AAR) from day-60 to+60 (121 days in total) and the cumulative average abnormal return (CAAR). T-statistic values for AARs are also listed. The results are computed from three models, the Market Model, the Mean-Adjusted Model and the Market Adjusted Model. Tables coded "...b" present a list of CAARs based on six different event windows. Day-60 to day+60; day-20 to day+20, day-10 to day+10, day-5 to day+5, day-1 to day+1, day-1 to day 0. CAARs calculated from all three models and t-statistic values are presented. Tables coded "...c" present a comparison of pre- and post- event CAARs and their t values. Please note, however, that although results calculated from all the three models are presented and tested at both the 5% and 1% significance levels, the description and analysis of the empirical results in this section primarily focuses on the Market Model results at 5% significance level. Finally, in order to test the null hypotheses proposed in Section 5.2, Tables coded "...d" are formed to present two-tailed test results using a simple paired comparison method. The Market Model results for all event windows (six different event windows, four pre-event windows and four post- event windows) are compared and tested at the 95% confidence level.

[137] Unless otherwise stated, the term "M&A" in a Chinese context in this section refers to acquisition of control.

5.3.1 Location

Table 5.3.1a shows detailed empirical results for the targets listed on the SZSE and SHSE, respectively. For those firms listed on the SZSE, all three models identified significant positive abnormal returns as early as day -54. Similarly, positive abnormal returns are also identified in Shanghai market as early as day -55. As was discussed in Chapter 4, it is possible that the reason for this early adjustment lies in the data sample: it could be the effect of certain outliers (maybe a very unique case) or more likely because of a noise effect.

A further look at the table towards day 0 reveals more interesting results, and the two markets appear to behave differently. Significant positive abnormal returns start to appear on the Shenzhen market in the immediate days before the event date, day -4, -3 and -1, at the 0.05 significance level, indicating the SZSE was adjusting quickly to the forthcoming event. Nonetheless, this might be caused by short-term information leakage. Shanghai group, on the other hand, does not identify any abnormal returns for the days immediately before the event day for Shanghai market. Instead, positive abnormal returns are identified slightly earlier, at day-16, -12 and -9. If short-term information leakage is the cause of these price adjustments just prior to the announcement date, then it appears that the information was leaked earlier regarding the target firms listed in Shanghai market than in Shenzhen market. As analysed in section 5.1.1, this difference may have been caused by the different characteristics of the firms listed on two exchanges. The two markets also appear to react differently on event day 0: no abnormal return is identified for the Shenzhen group but a significant positive abnormal return of 0.78% was observed for the Shanghai group.

Table 5.3.1a AAR and CAAR (Day-60 to Day+60) for Lacation Subgroup

	Location (Shenzhen): 86 in total												Location (Shanghai): 74 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-60	-0.10	-0.10	-0.37		0.08	0.08	0.24		-0.01	-0.01	-0.05		0.24	0.24	0.91		0.46	0.46	1.44		0.35	0.35	1.33	
-59	-0.28	-0.38	-1.02		-0.30	-0.22	-0.89		-0.12	-0.14	-0.44		0.47	0.71	1.81		0.55	1.01	1.74		0.64	0.99	2.47	*
-58	-0.05	-0.43	-0.18		0.11	-0.11	0.32		0.12	-0.02	0.43		0.37	1.08	1.41		0.51	1.52	1.62		0.46	1.46	1.77	
-57	0.10	-0.33	0.37		-0.06	-0.18	-0.18		0.18	0.17	0.66		0.21	1.28	0.80		0.61	2.13	1.92		0.29	1.75	1.12	
-56	0.19	-0.13	0.71		0.16	-0.02	0.47		0.23	0.40	0.84		0.17	1.45	0.65		0.21	2.34	0.68		0.31	2.06	1.20	
-55	-0.04	-0.18	-0.16		-0.34	-0.36	-1.00		-0.01	0.39	-0.04		0.77	2.23	2.96	** *	0.89	3.23	2.81	** *	0.90	2.96	3.44	** *
-54	0.70	0.53	2.58	** *	0.93	0.57	2.72	** *	0.84	1.23	3.02	** *	0.28	2.51	1.08		0.28	3.52	0.89		0.26	3.22	0.98	
-53	-0.19	0.34	-0.68		-0.12	0.46	-0.34		-0.08	1.15	-0.30		-0.19	2.31	-0.75		-0.33	3.19	-1.03		-0.08	3.14	-0.30	
-52	-0.14	0.20	-0.53		-0.08	0.38	-0.22		-0.07	1.08	-0.25		0.58	2.89	2.24	*	0.56	3.75	1.77		0.81	3.95	3.09	** *
-51	0.49	0.68	1.78		0.16	0.54	0.47		0.49	1.56	1.75		0.24	3.13	0.92		-0.12	3.63	-0.39		0.47	4.41	1.78	
-50	-0.03	0.65	-0.12		0.13	0.67	0.37		0.14	1.70	0.51		-0.39	2.75	-1.48		-0.37	3.26	-1.15		-0.31	4.10	-1.20	
-49	0.07	0.72	0.26		0.63	1.29	1.83		0.26	1.97	0.95		0.98	3.73	3.77	** *	0.86	4.12	2.70	** *	1.10	5.20	4.20	** *
-48	0.70	1.42	2.55	*	0.94	2.24	2.76	** *	0.84	2.81	3.01	** *	-0.07	3.66	-0.28		-0.06	4.06	-0.19		0.07	5.26	0.25	
-47	-0.90	0.52	-3.30	** *	-0.82	1.42	-2.39	*	-0.76	2.05	-2.72	** *	0.10	3.75	0.37		-0.15	3.91	-0.48		0.28	5.54	1.06	
-46	0.13	0.65	0.48		0.58	2.00	1.70		0.31	2.36	1.12		0.03	3.79	0.13		-0.06	3.85	-0.19		0.08	5.62	0.31	
-45	-0.09	0.56	-0.32		-0.01	1.99	-0.02		0.08	2.44	0.29		-0.21	3.58	-0.79		-0.17	3.67	-0.55		-0.16	5.46	-0.62	
-44	0.03	0.59	0.11		-0.01	1.98	-0.04		0.11	2.55	0.39		-0.19	3.39	-0.73		0.26	3.93	0.81		-0.05	5.40	-0.20	
-43	-0.07	0.52	-0.26		-0.05	1.93	-0.14		0.03	2.58	0.10		0.37	3.77	1.43		0.71	4.64	2.24	*	0.47	5.88	1.81	
-42	-0.43	0.09	-1.57		-0.56	1.38	-1.63		-0.33	2.25	-1.19		0.43	4.19	1.63		0.18	4.82	0.58		0.54	6.42	2.08	*
-41	-0.05	0.04	-0.19		0.16	1.54	0.48		-0.01	2.24	-0.03		0.39	4.58	1.49		0.51	5.33	1.61		0.44	6.86	1.67	
-40	-0.02	0.03	-0.06		0.11	1.66	0.34		0.03	2.27	0.11		0.65	5.23	2.50	*	0.82	6.15	2.59	** *	0.78	7.64	2.99	** *
-39	0.39	0.41	1.41		0.27	1.93	0.79		0.44	2.71	1.59		0.04	5.27	0.15		-0.17	5.98	-0.54		0.14	7.79	0.55	
-38	0.46	0.87	1.68		0.64	2.56	1.87		0.66	3.37	2.37	*	0.19	5.46	0.74		0.10	6.08	0.31		0.31	8.10	1.19	
-37	-0.71	0.16	-2.59	** *	-0.28	2.29	-0.81		-0.54	2.83	-1.95		-0.32	5.14	-1.23		-0.16	5.92	-0.51		-0.25	7.85	-0.94	
-36	0.55	0.71	2.01	*	0.50	2.79	1.46		0.67	3.50	2.42	*	0.22	5.36	0.84		0.26	6.18	0.83		0.32	8.17	1.24	

Table 5.3.1a (Cont.)

	Location (Shenzhen): 86 in total												Location (Shanghai): 74 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-35	0.07	0.78	0.27		0.48	3.27	1.40		0.21	3.71	0.75		0.24	5.60	0.90		0.35	6.54	1.12		0.36	8.54	1.39	
-34	-0.09	0.69	-0.33		0.06	3.33	0.19		0.11	3.82	0.39		-0.27	5.32	-1.05		-0.35	6.19	-1.11		-0.17	8.37	-0.66	
-33	0.55	1.24	2.01	*	0.86	4.19	2.53	*	0.65	4.47	2.34	*	0.07	5.39	0.26		0.00	6.19	0.01		0.19	8.56	0.73	
-32	0.45	1.69	1.64		0.71	4.91	2.09	*	0.58	5.05	2.10	*	0.31	5.70	1.18		0.52	6.71	1.64		0.43	8.99	1.64	
-31	-0.06	1.63	-0.21		0.22	5.13	0.64		0.07	5.12	0.25		-0.03	5.67	-0.12		-0.23	6.48	-0.72		0.09	9.08	0.34	
-30	-0.06	1.57	-0.23		0.00	5.13	0.01		0.07	5.19	0.25		0.48	6.14	1.83		0.78	7.26	2.47	*	0.60	9.67	2.28	*
-29	0.22	1.79	0.81		0.03	5.16	0.08		0.34	5.54	1.23		0.23	6.38	0.89		0.46	7.73	1.46		0.38	10.06	1.47	
-28	0.05	1.83	0.17		-0.05	5.11	-0.15		0.12	5.66	0.43		-0.13	6.25	-0.49		-0.16	7.56	-0.52		-0.05	10.01	-0.18	
-27	0.26	2.10	0.97		0.11	5.21	0.32		0.33	5.99	1.18		-0.18	6.07	-0.68		-0.12	7.45	-0.37		-0.07	9.94	-0.27	
-26	0.06	2.16	0.22		0.07	5.28	0.20		0.23	6.22	0.84		-0.13	5.95	-0.49		0.01	7.45	0.02		-0.11	9.82	-0.44	
-25	-0.23	1.92	-0.85		-0.30	4.99	-0.87		-0.09	6.12	-0.34		0.09	6.03	0.33		0.19	7.64	0.60		0.25	10.07	0.95	
-24	0.56	2.48	2.04	*	0.72	5.71	2.11	*	0.66	6.79	2.38	*	-0.05	5.98	-0.18		0.19	7.83	0.60		0.08	10.15	0.31	
-23	-0.17	2.31	-0.63		-0.26	5.45	-0.75		-0.02	6.77	-0.06		-0.01	5.98	-0.04		-0.09	7.74	-0.28		0.08	10.23	0.29	
-22	0.22	2.52	0.79		0.53	5.98	1.56		0.31	7.08	1.11		0.06	6.04	0.25		0.09	7.83	0.27		0.17	10.40	0.65	
-21	-0.42	2.10	-1.55		-0.23	5.76	-0.66		-0.32	6.76	-1.15		0.24	6.29	0.94		0.60	8.43	1.90		0.44	10.84	1.68	
-20	0.36	2.45	1.30		0.58	6.34	1.71		0.48	7.24	1.73		0.27	6.55	1.02		0.14	8.58	0.45		0.39	11.23	1.50	
-19	0.19	2.65	0.70		0.26	6.60	0.76		0.22	7.46	0.79		-0.28	6.27	-1.06		-0.13	8.45	-0.39		-0.18	11.06	-0.67	
-18	-0.07	2.57	-0.26		0.01	6.61	0.02		0.04	7.50	0.15		0.22	6.49	0.83		0.32	8.77	1.00		0.28	11.34	1.07	
-17	0.15	2.72	0.55		0.24	6.85	0.71		0.26	7.76	0.92		0.04	6.53	0.16		0.18	8.95	0.58		0.17	11.51	0.66	
-16	0.12	2.85	0.45		-0.03	6.82	-0.10		0.19	7.94	0.67		0.55	7.09	2.12	*	0.56	9.51	1.77		0.68	12.19	2.59	** *
-15	-0.12	2.73	-0.43		0.03	6.84	0.08		0.00	7.94	-0.02		-0.05	7.04	-0.19		0.12	9.64	0.39		0.02	12.21	0.08	
-14	0.25	2.98	0.92		0.59	7.44	1.74		0.39	8.33	1.40		0.32	7.35	1.21		0.51	10.14	1.60		0.42	12.63	1.61	
-13	0.50	3.48	1.85		0.41	7.85	1.20		0.62	8.95	2.23	*	0.43	7.78	1.63		0.28	10.42	0.87		0.55	13.18	2.11	*
-12	0.42	3.90	1.53		0.50	8.35	1.48		0.59	9.53	2.10	*	0.94	8.72	3.61	** *	0.98	11.40	3.10	** *	1.05	14.23	4.01	** *
-11	0.52	4.42	1.91		0.71	9.06	2.09	*	0.71	10.24	2.53	*	0.03	8.75	0.10		0.21	11.61	0.65		0.11	14.34	0.41	

Table 5.3.1a (Cont.)

	Location (Shenzhen): 86 in total												Location (Shanghai): 74 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-10	0.18	4.60	0.66		-0.06	9.00	-0.19		0.22	10.46	0.78		0.25	8.99	0.94		0.32	11.93	1.00		0.33	14.67	1.27	
-9	0.13	4.73	0.47		0.03	9.03	0.09		0.26	10.72	0.93		1.07	10.07	4.12	** *	0.99	12.92	3.14	** *	1.25	15.91	4.76	** *
-8	-0.23	4.50	-0.85		-0.05	8.98	-0.14		-0.04	10.68	-0.15		0.15	10.21	0.56		0.32	13.24	1.01		0.27	16.19	1.05	
-7	0.15	4.65	0.54		0.00	8.98	0.00		0.18	10.85	0.64		0.05	10.27	0.20		-0.10	13.14	-0.33		0.12	16.31	0.47	
-6	0.25	4.89	0.90		0.26	9.24	0.77		0.37	11.22	1.31		0.24	10.51	0.92		0.18	13.32	0.57		0.28	16.59	1.06	
-5	0.16	5.05	0.58		0.54	9.78	1.57		0.37	11.59	1.34		0.33	10.84	1.26		0.37	13.69	1.18		0.52	17.11	1.99	*
-4	1.04	6.09	3.80	** *	0.86	10.64	2.52	*	1.15	12.74	4.12	** *	0.41	11.24	1.56		0.43	14.12	1.35		0.57	17.67	2.16	*
-3	0.92	7.01	3.36	** *	0.87	11.51	2.55	*	1.10	13.84	3.94	** *	0.22	11.46	0.86		0.42	14.54	1.33		0.26	17.93	0.99	
-2	0.26	7.27	0.97		0.48	11.99	1.41		0.42	14.26	1.50		0.14	11.60	0.53		0.02	14.56	0.07		0.25	18.18	0.95	
-1	1.31	8.58	4.80	** *	1.40	13.39	4.09	** *	1.41	15.66	5.05	** *	-0.08	11.52	-0.32		-0.02	14.54	-0.07		0.06	18.24	0.23	
0	0.42	9.00	1.53		0.28	13.67	0.82		0.51	16.17	1.82		0.78	12.30	3.00	** *	0.56	15.10	1.77		0.93	19.17	3.55	** *
1	0.80	9.80	2.93	** *	0.77	14.44	2.26	*	0.91	17.08	3.27	** *	-0.05	12.25	-0.18		0.06	15.16	0.18		0.03	19.20	0.12	
2	0.12	9.93	0.45		0.23	14.68	0.69		0.14	17.22	0.49		0.13	12.39	0.51		-0.05	15.11	-0.17		0.18	19.38	0.70	
3	-0.24	9.69	-0.87		-0.14	14.53	-0.42		-0.15	17.07	-0.55		-0.35	12.03	-1.35		-0.43	14.67	-1.37		-0.24	19.14	-0.92	
4	0.06	9.75	0.22		0.10	14.64	0.31		0.20	17.27	0.72		-0.28	11.76	-1.07		-0.33	14.34	-1.03		-0.10	19.04	-0.39	
5	-0.49	9.26	-1.79		-0.33	14.31	-0.96		-0.45	16.82	-1.63		-0.26	11.49	-1.01		-0.39	13.95	-1.23		-0.22	18.82	-0.82	
6	-0.23	9.03	-0.84		-0.08	14.23	-0.24		-0.09	16.73	-0.31		-0.09	11.40	-0.35		-0.40	13.55	-1.27		0.06	18.88	0.23	
7	-0.76	8.28	-2.77	** *	-0.62	13.61	-1.82		-0.61	16.12	-2.20	*	-0.10	11.31	-0.37		-0.17	13.38	-0.54		0.06	18.94	0.24	
8	0.02	8.29	0.07		-0.13	13.48	-0.39		0.15	16.27	0.55		-0.32	10.99	-1.21		-0.46	12.92	-1.46		-0.16	18.79	-0.60	
9	0.55	8.84	2.00	*	0.59	14.07	1.72		0.64	16.91	2.31	*	0.07	11.06	0.26		0.14	13.05	0.44		0.20	18.99	0.76	
10	-0.39	8.45	-1.42		-0.33	13.73	-0.97		-0.26	16.65	-0.93		-0.30	10.76	-1.14		-0.60	12.46	-1.88		-0.19	18.79	-0.74	

Table 5.3.1a (Cont.)

	Location (Shenzhen): 86 in total												Location (Shanghai): 74 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
11	0.05	8.50	0.18		-0.14	13.60	-0.40		0.18	16.83	0.65		0.09	10.85	0.33		0.08	12.54	0.25		0.20	19.00	0.78	
12	0.07	8.57	0.25		0.01	13.61	0.03		0.15	16.98	0.54		0.41	11.25	1.56		0.29	12.83	0.93		0.53	19.53	2.03	*
13	0.04	8.61	0.14		0.02	13.63	0.06		0.07	17.06	0.27		0.14	11.40	0.55		0.08	12.90	0.24		0.30	19.83	1.15	
14	-0.09	8.51	-0.34		0.46	14.09	1.33		0.04	17.10	0.15		0.31	11.71	1.20		0.25	13.15	0.78		0.46	20.29	1.76	
15	0.19	8.70	0.68		0.39	14.48	1.14		0.34	17.44	1.22		-0.30	11.41	-1.13		-0.24	12.91	-0.77		-0.16	20.13	-0.63	
16	-0.01	8.69	-0.02		-0.06	14.41	-0.18		0.04	17.48	0.14		-0.42	10.99	-1.62		-0.12	12.79	-0.38		-0.32	19.81	-1.21	
17	0.21	8.90	0.77		0.09	14.50	0.25		0.25	17.73	0.90		0.40	11.39	1.54		0.32	13.10	1.00		0.45	20.25	1.71	
18	-0.43	8.48	-1.56		-0.20	14.30	-0.59		-0.25	17.47	-0.91		0.19	11.58	0.74		0.24	13.34	0.74		0.24	20.50	0.93	
19	0.02	8.50	0.09		-0.15	14.15	-0.43		0.08	17.56	0.30		0.09	11.68	0.35		0.27	13.61	0.87		0.25	20.75	0.97	
20	0.04	8.54	0.14		-0.10	14.05	-0.28		0.10	17.66	0.35		-0.01	11.67	-0.03		-0.24	13.37	-0.77		0.00	20.76	0.02	
21	0.19	8.73	0.68		0.11	14.17	0.33		0.29	17.94	1.03		-0.52	11.15	-1.99	*	-0.59	12.78	-1.86		-0.36	20.40	-1.37	
22	-0.28	8.45	-1.01		-0.40	13.77	-1.16		-0.21	17.73	-0.76		-0.45	10.70	-1.72		-0.34	12.44	-1.06		-0.23	20.16	-0.90	
23	-0.22	8.23	-0.81		-0.20	13.57	-0.60		-0.10	17.63	-0.35		0.01	10.71	0.04		-0.14	12.30	-0.43		0.10	20.26	0.38	
24	0.24	8.47	0.89		0.55	14.12	1.61		0.32	17.95	1.16		0.10	10.81	0.38		0.03	12.34	0.10		0.20	20.46	0.76	
25	0.10	8.57	0.36		0.20	14.32	0.59		0.17	18.12	0.59		-0.23	10.58	-0.89		-0.09	12.25	-0.28		-0.11	20.35	-0.42	
26	-0.81	7.76	-2.97	** *	-0.63	13.69	-1.84		-0.68	17.44	-2.45	*	0.10	10.67	0.38		0.12	12.37	0.39		0.20	20.55	0.75	
27	-0.12	7.64	-0.43		-0.07	13.62	-0.20		-0.05	17.39	-0.17		-0.14	10.53	-0.54		0.21	12.58	0.65		-0.01	20.54	-0.05	
28	0.54	8.18	1.98	*	0.55	14.17	1.60		0.57	17.96	2.04	*	-0.30	10.24	-1.14		-0.10	12.48	-0.31		-0.19	20.35	-0.72	
29	-0.03	8.16	-0.09		-0.06	14.11	-0.18		0.05	18.01	0.20		0.60	10.83	2.29	*	1.04	13.52	3.29	** *	0.66	21.01	2.53	*
30	0.17	8.32	0.61		0.09	14.19	0.25		0.33	18.35	1.20		0.07	10.90	0.27		0.12	13.64	0.38		0.24	21.25	0.92	
31	-0.73	7.60	-2.66	** *	-0.78	13.42	-2.27	*	-0.62	17.73	-2.23	*	0.19	11.09	0.73		0.24	13.88	0.76		0.30	21.55	1.15	
32	-0.18	7.42	-0.65		-0.19	13.23	-0.55		-0.09	17.64	-0.32		-0.25	10.85	-0.95		-0.32	13.56	-1.01		-0.15	21.39	-0.59	
33	-0.48	6.94	-1.77		-0.40	12.82	-1.18		-0.33	17.30	-1.19		-0.23	10.61	-0.90		-0.20	13.36	-0.63		-0.06	21.33	-0.25	
34	-0.13	6.80	-0.49		-0.06	12.77	-0.17		-0.07	17.24	-0.24		0.32	10.93	1.23		0.40	13.76	1.27		0.48	21.81	1.83	
35	0.22	7.03	0.82		0.08	12.84	0.22		0.32	17.56	1.15		-0.23	10.70	-0.89		-0.26	13.51	-0.81		-0.11	21.70	-0.42	

Table 5.3.1a (Cont.)

	Location (Shenzhen): 86 in total												Location (Shanghai): 74 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
36	-0.02	7.01	-0.08		-0.24	12.60	-0.70		0.04	17.60	0.16		-0.19	10.51	-0.72		-0.44	13.07	-1.39		0.01	21.71	0.05	
37	-0.09	6.92	-0.33		-0.20	12.40	-0.60		0.00	17.60	0.00		-0.34	10.18	-1.30		-0.21	12.86	-0.67		-0.21	21.50	-0.80	
38	0.17	7.09	0.63		-0.07	12.33	-0.20		0.27	17.87	0.96		-0.40	9.77	-1.54		-0.20	12.66	-0.63		-0.32	21.18	-1.21	
39	0.05	7.14	0.17		-0.02	12.31	-0.06		0.08	17.95	0.30		-0.26	9.52	-0.99		-0.05	12.61	-0.15		-0.15	21.03	-0.57	
40	0.02	7.16	0.08		0.13	12.44	0.39		0.13	18.09	0.48		0.74	10.26	2.85	** *	0.63	13.23	1.98	*	0.83	21.86	3.16	** *
41	-0.16	7.00	-0.58		0.23	12.67	0.68		-0.04	18.05	-0.14		0.19	10.45	0.72		0.05	13.29	0.17		0.30	22.17	1.16	
42	-0.55	6.45	-2.03	*	-0.34	12.34	-0.98		-0.45	17.59	-1.63		-0.45	10.00	-1.72		-0.19	13.09	-0.61		-0.32	21.84	-1.23	
43	0.15	6.60	0.55		0.07	12.41	0.20		0.24	17.84	0.87		0.44	10.44	1.70		0.65	13.75	2.07	*	0.55	22.39	2.09	*
44	-0.28	6.32	-1.03		0.00	12.40	-0.01		-0.17	17.67	-0.61		0.11	10.56	0.43		-0.19	13.56	-0.61		0.15	22.54	0.58	
45	0.23	6.55	0.83		0.32	12.72	0.93		0.30	17.97	1.09		-0.48	10.08	-1.82		-0.13	13.43	-0.40		-0.36	22.18	-1.39	
46	0.37	6.92	1.35		0.19	12.91	0.54		0.47	18.44	1.67		-0.33	9.75	-1.25		-0.43	13.00	-1.35		-0.29	21.89	-1.11	
47	-0.08	6.83	-0.30		-0.06	12.85	-0.17		0.02	18.46	0.09		-0.04	9.71	-0.16		-0.22	12.78	-0.71		0.05	21.93	0.18	
48	0.00	6.84	0.01		-0.10	12.74	-0.30		0.08	18.54	0.28		-0.02	9.69	-0.09		0.08	12.86	0.24		0.17	22.11	0.67	
49	-0.09	6.75	-0.32		-0.03	12.71	-0.10		0.02	18.56	0.06		-0.46	9.23	-1.77		-0.52	12.33	-1.65		-0.37	21.74	-1.40	
50	0.13	6.88	0.48		-0.10	12.61	-0.29		0.20	18.75	0.71		-1.03	8.20	-3.96	** *	-0.86	11.47	-2.73	** *	-0.88	20.86	-3.37	** *
51	0.28	7.16	1.04		0.19	12.80	0.55		0.37	19.13	1.34		0.25	8.44	0.94		0.32	11.79	1.02		0.34	21.20	1.29	
52	-0.30	6.86	-1.10		-0.26	12.54	-0.76		-0.18	18.94	-0.66		0.21	8.65	0.79		0.38	12.18	1.21		0.32	21.52	1.23	
53	-0.22	6.65	-0.79		-0.17	12.37	-0.50		-0.14	18.80	-0.52		0.28	8.92	1.06		0.30	12.48	0.94		0.40	21.92	1.52	
54	-0.53	6.11	-1.95		-0.31	12.06	-0.90		-0.43	18.37	-1.55		0.02	8.95	0.09		0.26	12.73	0.81		0.01	21.93	0.05	
55	0.15	6.27	0.57		-0.34	11.72	-0.99		0.22	18.59	0.79		-0.01	8.94	-0.04		-0.08	12.65	-0.25		0.05	21.99	0.20	
56	-0.33	5.93	-1.23		-0.48	11.24	-1.41		-0.22	18.37	-0.81		0.23	9.17	0.89		-0.16	12.49	-0.49		0.40	22.39	1.55	
57	-0.24	5.70	-0.87		-0.09	11.15	-0.27		-0.14	18.23	-0.50		-0.40	8.77	-1.52		-0.32	12.17	-1.02		-0.15	22.24	-0.56	
58	-0.20	5.49	-0.74		-0.36	10.79	-1.05		-0.12	18.10	-0.45		0.13	8.90	0.51		-0.11	12.06	-0.34		0.21	22.45	0.80	
59	-0.01	5.48	-0.03		-0.27	10.52	-0.78		0.10	18.20	0.38		0.01	8.91	0.02		0.15	12.22	0.48		0.11	22.56	0.41	
60	-0.08	5.41	-0.29		-0.03	10.50	-0.08		0.02	18.22	0.07		-0.07	8.84	-0.27		-0.04	12.17	-0.14		0.09	22.65	0.36	

** Significant at 0.01 level; * Significant at 0.05 level

Significant abnormal returns continue to be identified in the Shenzhen market after the announcement dates on day+1, +7 and +9. A significant negative abnormal return of -0.76% was seen on day +7, although not economically significant, indicates that the A share prices may have overreacted to the announcement around the event date in the Shenzhen market. No abnormal returns were recognised in the SHSE until day+21.

Above results, however, should not lead to casual statements that the Shenzhen market is not efficient in terms of *fully* reflecting publicly available information, or that the Shanghai market is not efficient in terms of *immediately* reflecting the publicly available information that is embodied in the announcement. As was discussed in the Chapter 4, if an announcement was made after the market closes on day 0, the market would only react on day 1. Nonetheless, it should be noted that the above results might well indicate some differences between the efficiency of the two markets.

Table 5.3.1b below presents the CAARs based on seven different event windows centred on day 0 for the two markets. Positive CAARs are identified for all event windows for the two markets. The CAARs across day-60 to day+60 are also presented graphically in Figure 5.3.1a and 5.3.1b below, for companies listed in the SZSE and SHSE respectively. The results suggest that both markets anticipate these corporate restructuring activities as "value-adding" and acquisitions of control bring benefits to the shareholders of targeted firms.

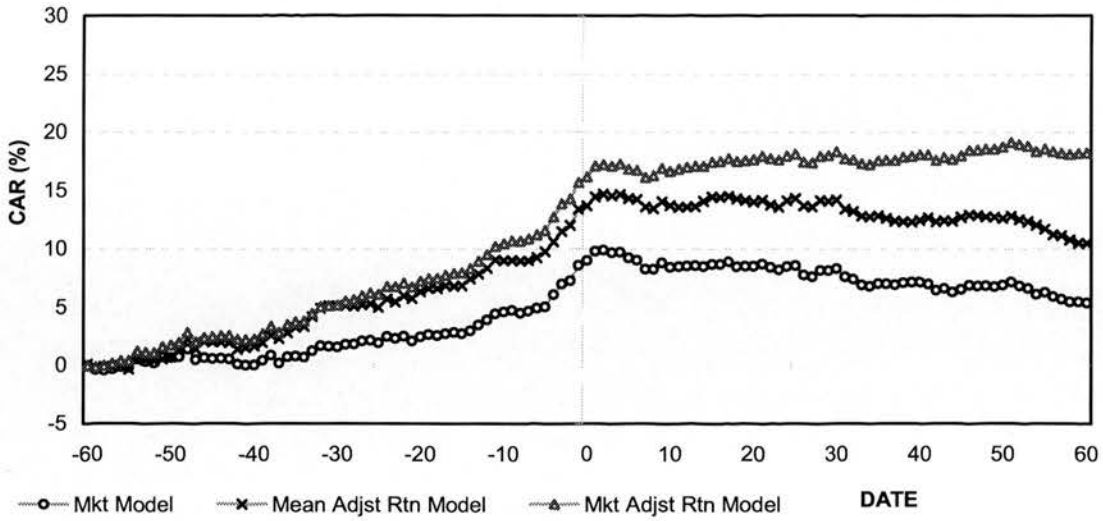

Figure 5.3.1a CAAR in Shenzhen Market

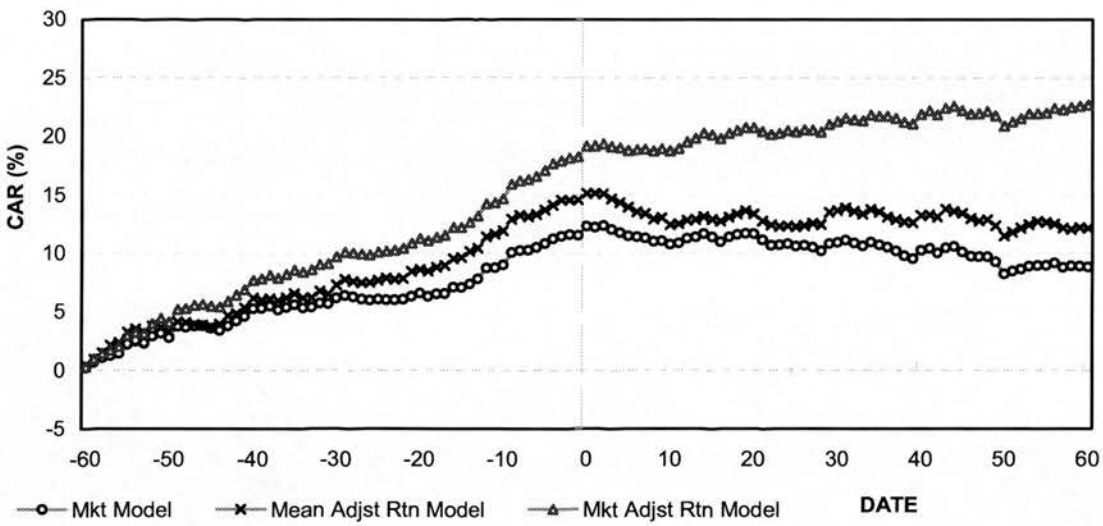

Figure 5.3.1b CAAR in Shanghai Market

In order to gain a better understanding of the added value, Table 5.3.1c was formed to compare CAARs from event windows both before and after day 0. Take the Market Model results for instance: there are significant positive abnormal returns in pre-event windows: day-60 to day-1, day-20 to day-1, day-10 to day-1 for both markets, and in addition, a significant positive abnormal return is also identified for day-5 to day-1 for the SZSE. Although negative CAARs are identified for the event window immediately after the announcement, they are not statistically significant. These results confirm that the shareholders of the target firms gain prior to the M&As' announcements regardless where the target firms are listed. As soon as the news was

Table 5.3.1b CAAR for Lacation Subgroup

	Location (Shenzhen): 86 in total									Location (Shanghai): 74 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - +60 (121 days)	5.41%	1.80		10.50%	2.79	** *	18.22%	5.95	** *	8.84%	3.08	** *	12.17%	3.49	** *	22.65%	7.88	** *
-20 - +20 (41 days)	6.44%	3.68	** *	8.30%	3.79	** *	10.90%	6.11	** *	5.38%	3.22	** *	4.94%	2.43	*	9.91%	5.92	** *
-10 - +10 (21 days)	4.03%	3.22	** *	4.67%	2.98	** *	6.41%	5.02	** *	2.01%	1.68		0.85%	0.58		4.46%	3.72	** *
-5 - +5 (11 days)	4.37%	4.82	** *	5.07%	4.47	** *	5.60%	6.06	** *	0.98%	1.14		0.63%	0.60		2.23%	2.58	*
-1 - +1 (3 days)	2.53%	5.35	*	2.45%	4.14		2.83%	5.86	*	0.65%	1.44		0.60%	1.09		1.02%	2.25	
-1 - 0 (2 days)	1.73%	4.48		1.68%	3.47		1.91%	4.86		0.70%	1.89		0.54%	1.21		0.99%	2.67	

** Significant at 0.01 level * Significant at 0.05 level

Table 5.3.1c Pre- and Post-Event CAAR for Lacation Subgroup

	Location (Shenzhen): 86 in total									Location (Shanghai): 74 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - -1 (60 days)	8.58%	4.06	** *	13.39%	5.06	** *	15.66%	7.26	** *	11.52%	5.70	** *	14.54%	5.92	** *	18.24%	9.01	** *
+1 - +60 (60 days)	-3.60%	-1.70		-3.17%	-1.20		2.05%	0.95		-3.46%	-1.71		-2.93%	-1.19		3.49%	1.72	
-20 - -1 (20 days)	6.06%	5.31	** *	7.41%	5.00	** *	8.59%	7.15	** *	5.48%	4.49	** *	6.71%	4.31	** *	7.84%	6.33	** *
+1 - +20 (20 days)	-0.46%	-0.38		0.38%	0.25		1.49%	1.19		-0.63%	-0.54		-1.73%	-1.22		1.59%	1.36	
-10 - -1 (10 days)	4.16%	4.82	** *	4.33%	4.01	** *	5.42%	6.16	** *	2.77%	3.36	** *	2.93%	2.92	*	3.90%	4.72	** *
+1 - +10 (10 days)	-0.55%	-0.64		0.06%	0.06		0.48%	0.55		-1.54%	-1.87		-2.65%	-2.64	*	-0.38%	-0.45	
-5 - -1 (5 days)	3.69%	6.04	** *	4.15%	5.43	** *	4.44%	7.13	** *	1.01%	1.74		1.22%	1.73		1.65%	2.83	*
+1 - +5 (5 days)	0.26%	0.42		0.64%	0.84		0.65%	1.04		-0.81%	-1.39		-1.15%	-1.62		-0.35%	-0.59	

** Significant at 0.01 level * Significant at 0.05 level

released to the public, however, M&A activities announcements conveyed no new information, in either market.

In order to test if there is any difference between the two markets (hence, a two-tailed test is appropriate) in terms of the wealth created around the M&A announcements,

Table 5.3.1d T-Test for Location Subgroup

	Shenzhen	***Shanghai***	***Shenzhen***	***Shanghai***	***Shenzhen***	***Shanghai***
	(Day-60 - Day+60)		(Day-60 - Day-1)		(Day+1 - Day+60)	
Mean	0.0447	0.0731	0.1431	0.1920	-0.0599	-0.0577
Variance	0.1295	0.1152	0.1449	0.0957	0.0950	0.0982
Observations	121		60		60	
Pearson Correlation	0.1244		0.0449		-0.0486	
Hypothesized Mean Difference	0		0		0	
df	120		59		59	
t Stat	-0.6744		-0.7897		-0.0391	
P(T<=t) one-tail	0.2507		0.2164		0.4845	
t Critical one-tail	1.6577		1.6711		1.6711	
P(T<=t) two-tail	0.5014		0.4329		0.9690	
t Critical two-tail	1.9799		2.0010		2.0010	
	(Day-20 - Day+20)		(Day-20 - Day-1)		(Day+1 - Day+20)	
Mean	0.1571	0.1312	0.3244	0.2617	-0.0232	-0.0317
Variance	0.1594	0.1122	0.1474	0.1026	0.1209	0.0655
Observations	41		20		20	
Pearson Correlation	0.2769		-0.0304		0.2117	
Hypothesized Mean Difference	0		0		0	
df	40		19		19	
t Stat	0.3730		0.5524		0.0992	
P(T<=t) one-tail	0.3556		0.2935		0.4610	
t Critical one-tail	1.6839		1.7291		1.7291	
P(T<=t) two-tail	0.7111		0.5871		0.9220	
t Critical two-tail	2.0211		2.0930		2.0930	
	(Day-10 - Day+10)		(Day-10 - Day-1)		(Day+1 - Day+10)	
Mean	0.1917	0.0958	0.4160	0.2771	-0.0552	-0.1540
Variance	0.2675	0.1283	0.2432	0.0974	0.2219	0.0295
Observations	21		10		10	
Pearson Correlation	0.3168		-0.2409		0.4511	
Hypothesized Mean Difference	0		0		0	
df	20		9		9	
t Stat	0.8329		0.6820		0.7399	
P(T<=t) one-tail	0.2074		0.2562		0.2391	
t Critical one-tail	1.7247		1.8331		1.8331	
P(T<=t) two-tail	0.4147		0.5124		0.4782	
t Critical two-tail	2.0860		2.2622		2.2622	
	(Day-5 - Day+5)		(Day-5 - Day-1)		(Day+1 - Day+5)	
Mean	0.3969	0.0895	0.7380	0.2025	0.0515	-0.1619
Variance	0.3132	0.1165	0.2528	0.0361	0.2355	0.0403
Observations	11		5		5	
Pearson Correlation	0.3740		-0.3744		0.5526	
Hypothesized Mean Difference	0		0		0	
df	10		4		4	
t Stat	1.9036		1.9948		1.1636	
P(T<=t) one-tail	0.0431		0.0584		0.1546	
t Critical one-tail	1.8125		2.1318		2.1318	
P(T<=t) two-tail	0.0861		0.1168		0.3093	
t Critical two-tail	2.2281		2.7764		2.7764	
	(Day-1 - Day+1)				(Day-1 - Day0)	
Mean	0.8438	0.2165			0.8654	0.3488
Variance	0.2008	0.2402			0.3989	0.3754
Observations	3				2	
Pearson Correlation	-0.8419				-1	
Hypothesized Mean Difference	0				0	
df	2				1	
t Stat	1.2065				0.5871	
P(T<=t) one-tail	0.1755				0.3310	
t Critical one-tail	2.9200				6.3138	
P(T<=t) two-tail	0.3510				0.6620	
t Critical two-tail	4.3027				12.7062	

paired sample t-tests were carried out for all event windows and the detailed results are presented in Table 5.3.1d. The daily AARs calculated using the Market Model throughout 14 different event windows[138] were compared and tested at the 0.05 significance level. The fact that no t-value is significant shows that the null hypothesis of equality of the mean abnormal returns for the two markets cannot be rejected and it is concluded that the degree of abnormal returns for the target firms is the same regardless of the location they are listed on, e.g. Shanghai or Shenzhen.

The above finding is consistent with previous theoretical arguments. Although China has two stock exchanges, they are performing identical functions and according to the empirical results presented above, they react to the same type of news, M&A announcements in this case, very similarly.

5.3.2 Industry Effect

Table 5.3.2a lists detailed AARs obtained from all three models throughout the event window of day-60 to day+60 for the Industrial group and non-Industrial group.

At 0.05 significance level, the Market Model identifies abnormal returns earlier and more frequently for non-industrial group (on day-54, -52, -49, -36, -32, -29, -20, -12) compared to industrial group (only on day-40, -37, -12). For days immediately prior to day 0, abnormal returns are recognised for the non-industrial group at day-6 and -4 (more interestingly, a non-significant negative abnormal return occurred on day 0 for

[138] 14 event windows are: (from left to right, then downwards) Day-60 to Day+60; Day-60 to Day-1; Day+1 to Day+60; Day-20 to Day+20; Day-20 to Day-1; Day+1 to Day+20; Day-10 to Day+10; Day-10 to Day-1; Day+1 to Day+10; Day-5 to Day+5; Day-5 to Day-1; Day+1 to Day+5; Day-1 to Day+1 and finally Day-1 to Day 0.

Table 5.3.2a AAR and CAAR (Day-60 to Day+60) for Industry Type Subgroup

	Industrial: 97 in total												NonIndustrial: 63 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-60	-0.03	-0.03	-0.09		0.05	0.05	0.16		0.08	0.08	0.31		0.18	0.18	0.60		0.57	0.57	1.54		0.26	0.26	0.84	
-59	0.21	0.18	0.78		0.30	0.35	0.89		0.38	0.46	1.37		-0.15	0.03	-0.49		-0.23	0.34	-0.62		0.01	0.27	0.03	
-58	0.49	0.67	1.80		0.63	0.98	1.85		0.58	1.04	2.11	*	-0.38	-0.35	-1.27		-0.21	0.12	-0.58		-0.19	0.09	-0.60	
-57	0.24	0.91	0.87		0.28	1.26	0.82		0.30	1.34	1.08		0.02	-0.34	0.06		0.20	0.32	0.54		0.14	0.22	0.44	
-56	0.04	0.95	0.14		0.02	1.27	0.05		0.12	1.46	0.44		0.41	0.07	1.34		0.44	0.77	1.21		0.50	0.72	1.61	
-55	0.32	1.26	1.17		-0.05	1.22	-0.16		0.38	1.84	1.37		0.36	0.43	1.19		0.66	1.43	1.80		0.46	1.18	1.49	
-54	0.33	1.59	1.22		0.54	1.76	1.59		0.39	2.23	1.42		0.78	1.21	2.58	** *	0.77	2.20	2.10	*	0.85	2.03	2.74	** *
-53	-0.53	1.06	-1.95		-0.72	1.03	-2.14	*	-0.40	1.83	-1.45		0.33	1.54	1.08		0.57	2.78	1.55		0.41	2.44	1.32	
-52	-0.08	0.98	-0.30		-0.10	0.93	-0.30		0.04	1.87	0.16		0.61	2.16	2.03	*	0.71	3.49	1.93		0.78	3.22	2.53	*
-51	0.26	1.24	0.96		0.03	0.96	0.09		0.38	2.25	1.39		0.54	2.70	1.80		0.03	3.52	0.08		0.62	3.84	2.01	*
-50	0.02	1.26	0.06		0.13	1.09	0.39		0.15	2.40	0.53		-0.53	2.17	-1.74		-0.46	3.06	-1.25		-0.40	3.44	-1.29	
-49	0.22	1.48	0.81		0.45	1.55	1.34		0.33	2.73	1.19		0.92	3.09	3.02	** *	1.16	4.22	3.15	** *	1.15	4.59	3.71	** *
-48	0.46	1.94	1.70		0.41	1.96	1.21		0.62	3.34	2.24	*	0.16	3.25	0.52		0.59	4.81	1.59		0.28	4.87	0.89	
-47	-0.48	1.46	-1.78		-0.51	1.45	-1.51		-0.33	3.01	-1.22		-0.38	2.87	-1.25		-0.51	4.30	-1.38		-0.20	4.67	-0.63	
-46	0.22	1.67	0.80		0.10	1.55	0.31		0.29	3.29	1.04		-0.11	2.76	-0.37		0.56	4.86	1.52		0.08	4.75	0.25	
-45	-0.30	1.38	-1.10		-0.33	1.23	-0.97		-0.17	3.12	-0.63		0.10	2.86	0.33		0.29	5.15	0.79		0.19	4.94	0.60	
-44	-0.29	1.09	-1.07		-0.14	1.09	-0.41		-0.20	2.92	-0.73		0.27	3.12	0.88		0.50	5.65	1.35		0.40	5.33	1.28	
-43	0.27	1.36	1.01		0.37	1.45	1.08		0.36	3.28	1.32		-0.08	3.04	-0.26		0.21	5.85	0.56		0.04	5.37	0.11	
-42	-0.10	1.26	-0.36		-0.24	1.22	-0.70		-0.02	3.26	-0.08		0.07	3.11	0.22		-0.18	5.67	-0.49		0.22	5.59	0.71	
-41	0.10	1.36	0.39		0.23	1.44	0.67		0.15	3.41	0.53		0.23	3.34	0.75		0.47	6.15	1.29		0.28	5.87	0.89	
-40	0.57	1.94	2.12	*	0.61	2.06	1.81		0.67	4.08	2.45	*	-0.14	3.20	-0.46		0.18	6.33	0.49		-0.08	5.79	-0.26	
-39	0.00	1.94	0.00		-0.19	1.86	-0.56		0.09	4.17	0.32		0.57	3.77	1.89		0.46	6.78	1.25		0.64	6.43	2.07	*
-38	0.27	2.21	1.00		0.39	2.26	1.16		0.44	4.60	1.58		0.44	4.20	1.44		0.39	7.17	1.05		0.60	7.03	1.94	
-37	-0.86	1.35	-3.18	** *	-0.55	1.71	-1.62		-0.73	3.88	-2.65	** *	-0.02	4.18	-0.07		0.28	7.45	0.75		0.09	7.11	0.29	
-36	0.16	1.51	0.60		0.20	1.90	0.58		0.28	4.16	1.02		0.76	4.94	2.49	*	0.69	8.14	1.87		0.87	7.98	2.81	** *

Table 5.3.2a (Cont.)

	Industrial: 97 in total												NonIndustrial: 63 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-35	0.14	1.65	0.52		0.36	2.27	1.07		0.29	4.44	1.05		0.16	5.10	0.52		0.51	8.65	1.38		0.27	8.25	0.87	
-34	-0.22	1.43	-0.82		-0.23	2.03	-0.69		-0.06	4.38	-0.22		-0.10	4.99	-0.34		0.04	8.68	0.10		0.04	8.29	0.13	
-33	0.20	1.63	0.74		0.25	2.28	0.74		0.32	4.70	1.16		0.52	5.51	1.71		0.80	9.48	2.17	*	0.63	8.92	2.02	*
-32	0.01	1.64	0.05		0.35	2.63	1.03		0.18	4.88	0.66		0.95	6.47	3.15	** *	1.05	10.53	2.85	** *	1.02	9.94	3.31	** *
-31	-0.06	1.58	-0.22		0.02	2.65	0.06		0.05	4.93	0.18		-0.02	6.44	-0.08		0.00	10.53	0.01		0.12	10.06	0.39	
-30	0.23	1.81	0.84		0.37	3.02	1.08		0.37	5.30	1.34		0.13	6.57	0.41		0.36	10.89	0.98		0.23	10.29	0.74	
-29	-0.20	1.61	-0.74		-0.16	2.86	-0.47		-0.05	5.25	-0.18		0.88	7.45	2.91	** *	0.82	11.72	2.23	*	0.99	11.28	3.21	** *
-28	-0.38	1.24	-1.39		-0.42	2.44	-1.23		-0.23	5.02	-0.85		0.49	7.94	1.62		0.38	12.10	1.04		0.47	11.75	1.51	
-27	0.02	1.26	0.08		0.06	2.50	0.17		0.16	5.18	0.58		0.12	8.06	0.39		-0.08	12.02	-0.21		0.12	11.87	0.39	
-26	0.04	1.30	0.14		-0.08	2.41	-0.25		0.12	5.30	0.44		-0.13	7.93	-0.42		0.23	12.25	0.62		0.00	11.87	-0.01	
-25	-0.19	1.11	-0.69		0.01	2.42	0.03		-0.04	5.26	-0.15		0.07	8.00	0.24		-0.20	12.06	-0.53		0.23	12.10	0.73	
-24	0.36	1.47	1.33		0.66	3.08	1.96		0.52	5.78	1.88		0.15	8.15	0.49		0.19	12.24	0.50		0.20	12.30	0.65	
-23	-0.10	1.37	-0.36		-0.28	2.80	-0.83		-0.01	5.77	-0.02		-0.10	8.05	-0.33		-0.02	12.22	-0.07		0.07	12.37	0.24	
-22	0.10	1.47	0.36		0.25	3.06	0.74		0.26	6.03	0.93		0.22	8.27	0.73		0.44	12.66	1.20		0.23	12.60	0.74	
-21	-0.17	1.30	-0.62		-0.09	2.97	-0.26		-0.03	6.00	-0.11		-0.03	8.24	-0.11		0.54	13.19	1.45		0.13	12.72	0.40	
-20	0.08	1.38	0.29		0.06	3.03	0.18		0.23	6.23	0.84		0.68	8.92	2.24	*	0.87	14.07	2.37	*	0.76	13.49	2.47	*
-19	-0.36	1.02	-1.35		-0.39	2.64	-1.16		-0.28	5.94	-1.04		0.50	9.42	1.64		0.81	14.88	2.20	*	0.53	14.02	1.72	
-18	0.01	1.03	0.04		0.14	2.77	0.40		0.14	6.08	0.50		0.14	9.56	0.47		0.17	15.05	0.46		0.17	14.19	0.55	
-17	0.05	1.08	0.20		0.21	2.98	0.63		0.22	6.30	0.79		0.17	9.73	0.58		0.22	15.27	0.61		0.22	14.41	0.72	
-16	0.27	1.35	0.99		0.24	3.22	0.71		0.35	6.65	1.28		0.41	10.14	1.34		0.25	15.52	0.67		0.51	14.92	1.64	
-15	0.02	1.36	0.06		0.18	3.41	0.54		0.13	6.77	0.46		-0.25	9.89	-0.81		-0.10	15.41	-0.28		-0.17	14.75	-0.56	
-14	0.25	1.62	0.94		0.43	3.84	1.28		0.39	7.16	1.41		0.32	10.22	1.06		0.74	16.15	2.00	*	0.43	15.17	1.38	
-13	0.46	2.08	1.70		0.23	4.07	0.69		0.54	7.70	1.97	*	0.48	10.70	1.58		0.53	16.68	1.43		0.66	15.83	2.14	*
-12	0.62	2.70	2.30	*	0.83	4.90	2.45	*	0.78	8.49	2.85	** *	0.72	11.42	2.38	*	0.57	17.25	1.55		0.82	16.66	2.65	** *
-11	0.44	3.14	1.63		0.51	5.41	1.51		0.55	9.04	2.02	*	0.07	11.48	0.22		0.43	17.68	1.17		0.23	16.89	0.76	

Table 5.3.2a (Cont.)

	Industrial: 97 in total												NonIndustrial: 63 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-10	0.24	3.38	0.89		0.02	5.43	0.05		0.31	9.36	1.14		0.16	11.65	0.54		0.26	17.94	0.70		0.21	17.10	0.66	
-9	0.63	4.01	2.32	*	0.58	6.01	1.71		0.78	10.13	2.82	** *	0.47	12.12	1.55		0.32	18.25	0.86		0.62	17.72	2.01	*
-8	0.24	4.24	0.87		0.44	6.45	1.29		0.39	10.52	1.42		-0.51	11.61	-1.68		-0.36	17.89	-0.98		-0.33	17.39	-1.08	
-7	0.21	4.45	0.77		-0.11	6.34	-0.31		0.27	10.79	0.97		-0.06	11.55	-0.18		0.04	17.93	0.11		-0.03	17.36	-0.09	
-6	0.00	4.45	0.01		-0.09	6.25	-0.27		0.08	10.87	0.29		0.61	12.16	2.02	*	0.71	18.64	1.93		0.70	18.06	2.27	*
-5	0.21	4.67	0.79		0.34	6.59	1.01		0.41	11.28	1.48		0.27	12.44	0.91		0.65	19.29	1.76		0.50	18.56	1.60	
-4	0.81	5.47	2.98	** *	0.61	7.20	1.81		0.93	12.21	3.38	** *	0.65	13.09	2.15	*	0.74	20.03	2.00	*	0.80	19.36	2.58	** *
-3	0.66	6.13	2.44	*	0.62	7.82	1.84		0.73	12.94	2.66	** *	0.50	13.59	1.65		0.72	20.75	1.96	*	0.68	20.04	2.18	*
-2	0.16	6.29	0.59		0.12	7.95	0.36		0.29	13.23	1.05		0.28	13.87	0.91		0.49	21.24	1.34		0.42	20.45	1.34	
-1	0.80	7.10	2.97	** *	1.03	8.97	3.03	** *	0.92	14.14	3.33	** *	0.46	14.32	1.50		0.30	21.55	0.83		0.58	21.03	1.87	
0	1.29	8.38	4.76	** *	1.09	10.06	3.23	** *	1.37	15.51	4.98	** *	-0.49	13.83	-1.62		-0.64	20.91	-1.74		-0.33	20.70	-1.05	
1	0.63	9.02	2.35	*	0.59	10.65	1.73		0.69	16.21	2.52	*	0.06	13.89	0.20		0.22	21.12	0.59		0.22	20.92	0.70	
2	0.03	9.04	0.09		-0.01	10.64	-0.02		0.07	16.28	0.27		0.28	14.18	0.94		0.27	21.39	0.72		0.29	21.21	0.93	
3	-0.36	8.68	-1.34		-0.28	10.36	-0.84		-0.27	16.01	-0.96		-0.18	14.00	-0.59		-0.27	21.12	-0.74		-0.08	21.12	-0.27	
4	-0.15	8.53	-0.56		-0.17	10.19	-0.49		0.00	16.01	0.01		-0.01	13.99	-0.03		0.01	21.13	0.04		0.15	21.28	0.49	
5	-0.11	8.42	-0.41		-0.19	10.00	-0.57		-0.06	15.95	-0.22		-0.81	13.18	-2.66	** *	-0.61	20.52	-1.66		-0.78	20.50	-2.51	*
6	-0.04	8.38	-0.15		-0.28	9.73	-0.82		0.05	16.01	0.19		-0.36	12.82	-1.18		-0.16	20.37	-0.43		-0.13	20.37	-0.42	
7	-0.61	7.77	-2.26	*	-0.57	9.15	-1.70		-0.43	15.58	-1.56		-0.20	12.62	-0.67		-0.16	20.20	-0.45		-0.10	20.27	-0.33	
8	0.17	7.94	0.62		-0.01	9.15	-0.02		0.33	15.90	1.19		-0.60	12.01	-2.00	*	-0.72	19.48	-1.95		-0.48	19.79	-1.55	
9	0.28	8.22	1.05		0.07	9.22	0.21		0.38	16.28	1.38		0.39	12.40	1.28		0.86	20.35	2.34	*	0.53	20.32	1.70	
10	-0.10	8.12	-0.36		-0.28	8.94	-0.82		0.02	16.31	0.08		-0.73	11.67	-2.40	*	-0.72	19.62	-1.96	*	-0.62	19.70	-1.99	*

Table 5.3.2a (Cont.)

	Industrial: 97 in total												NonIndustrial: 63 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
11	0.16	8.28	0.60		-0.03	8.90	-0.10		0.29	16.60	1.06		-0.08	11.59	-0.27		-0.04	19.58	-0.11		0.04	19.74	0.12	
12	0.15	8.43	0.54		0.10	9.00	0.29		0.27	16.86	0.97		0.35	11.94	1.14		0.21	19.78	0.56		0.42	20.16	1.35	
13	0.18	8.61	0.67		0.02	9.02	0.06		0.28	17.14	1.02		-0.06	11.87	-0.20		0.09	19.87	0.24		0.03	20.18	0.08	
14	0.05	8.67	0.20		0.43	9.46	1.28		0.16	17.30	0.58		0.15	12.03	0.51		0.24	20.12	0.66		0.35	20.53	1.13	
15	-0.15	8.52	-0.55		-0.08	9.38	-0.23		-0.02	17.29	-0.06		0.14	12.16	0.45		0.36	20.48	0.99		0.29	20.83	0.95	
16	-0.22	8.30	-0.80		0.07	9.45	0.20		-0.10	17.19	-0.37		-0.17	11.99	-0.56		-0.33	20.15	-0.90		-0.16	20.66	-0.52	
17	0.36	8.66	1.32		0.22	9.67	0.65		0.38	17.57	1.39		0.21	12.20	0.69		0.15	20.30	0.41		0.28	20.94	0.89	
18	-0.47	8.19	-1.73		-0.29	9.38	-0.87		-0.39	17.18	-1.41		0.36	12.57	1.20		0.45	20.75	1.23		0.54	21.48	1.73	
19	0.10	8.29	0.35		0.16	9.54	0.49		0.20	17.38	0.74		-0.01	12.56	-0.02		-0.13	20.62	-0.36		0.10	21.58	0.32	
20	0.03	8.31	0.10		-0.25	9.29	-0.75		0.06	17.45	0.23		0.00	12.56	0.00		-0.03	20.59	-0.08		0.04	21.62	0.13	
21	-0.11	8.21	-0.40		-0.19	9.10	-0.55		0.02	17.47	0.07		-0.19	12.37	-0.63		-0.25	20.34	-0.69		-0.06	21.56	-0.19	
22	-0.31	7.90	-1.14		-0.34	8.76	-1.01		-0.19	17.28	-0.69		-0.43	11.94	-1.42		-0.41	19.93	-1.12		-0.27	21.29	-0.88	
23	0.11	8.01	0.39		-0.17	8.59	-0.51		0.18	17.45	0.65		-0.45	11.49	-1.49		-0.18	19.75	-0.48		-0.29	20.99	-0.94	
24	0.12	8.12	0.43		0.35	8.93	1.03		0.23	17.68	0.83		0.27	11.76	0.89		0.25	20.00	0.69		0.32	21.32	1.05	
25	0.14	8.26	0.50		0.36	9.29	1.05		0.19	17.87	0.69		-0.35	11.41	-1.15		-0.38	19.63	-1.03		-0.20	21.12	-0.63	
26	-0.49	7.76	-1.83		-0.38	8.91	-1.12		-0.35	17.53	-1.26		-0.23	11.18	-0.76		-0.13	19.50	-0.35		-0.17	20.95	-0.54	
27	0.13	7.90	0.50		0.24	9.15	0.72		0.24	17.76	0.86		-0.53	10.64	-1.77		-0.22	19.28	-0.61		-0.44	20.51	-1.43	
28	0.21	8.11	0.77		0.52	9.67	1.54		0.27	18.03	0.98		0.07	10.71	0.22		-0.17	19.11	-0.46		0.14	20.65	0.44	
29	0.39	8.50	1.46		0.58	10.25	1.71		0.48	18.51	1.74		0.06	10.77	0.20		0.25	19.35	0.68		0.11	20.76	0.36	
30	0.19	8.69	0.71		0.00	10.25	0.01		0.36	18.87	1.30		0.01	10.79	0.05		0.25	19.61	0.69		0.19	20.95	0.60	
31	-0.41	8.28	-1.53		-0.41	9.85	-1.21		-0.27	18.60	-0.99		-0.13	10.66	-0.44		-0.15	19.46	-0.40		-0.07	20.87	-0.24	
32	-0.04	8.24	-0.14		-0.03	9.81	-0.09		0.04	18.63	0.13		-0.48	10.18	-1.57		-0.59	18.87	-1.59		-0.36	20.51	-1.16	
33	-0.29	7.95	-1.08		-0.24	9.57	-0.72		-0.15	18.49	-0.53		-0.49	9.69	-1.60		-0.41	18.47	-1.10		-0.30	20.21	-0.98	
34	0.16	8.11	0.58		0.30	9.87	0.90		0.25	18.74	0.92		-0.05	9.65	-0.15		-0.07	18.39	-0.20		0.08	20.29	0.26	
35	0.02	8.13	0.08		-0.07	9.80	-0.21		0.13	18.87	0.47		0.00	9.64	-0.01		-0.09	18.30	-0.24		0.11	20.40	0.35	

Table 5.3.2a (Cont.)

	Industrial: 97 in total												NonIndustrial: 63 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
36	-0.02	8.11	-0.06		-0.03	9.77	-0.10		0.08	18.95	0.30		-0.22	9.42	-0.74		-0.79	17.51	-2.15	*	-0.05	20.35	-0.17	
37	-0.08	8.03	-0.29		-0.15	9.63	-0.43		0.01	18.97	0.05		-0.40	9.02	-1.32		-0.30	17.21	-0.82		-0.27	20.08	-0.86	
38	-0.02	8.01	-0.07		-0.06	9.57	-0.18		0.10	19.06	0.35		-0.20	8.82	-0.68		-0.24	16.97	-0.64		-0.16	19.92	-0.51	
39	-0.47	7.55	-1.74		-0.38	9.19	-1.11		-0.36	18.70	-1.31		0.49	9.30	1.60		0.49	17.46	1.33		0.49	20.42	1.59	
40	0.09	7.64	0.35		0.21	9.40	0.62		0.18	18.88	0.65		0.76	10.06	2.51	*	0.59	18.05	1.61		0.88	21.29	2.84	** *
41	-0.01	7.63	-0.03		0.18	9.58	0.52		0.12	19.00	0.42		0.02	10.08	0.06		0.11	18.16	0.29		0.13	21.42	0.41	
42	-0.44	7.19	-1.63		-0.22	9.36	-0.65		-0.30	18.70	-1.10		-0.60	9.48	-1.99	*	-0.35	17.82	-0.94		-0.53	20.89	-1.72	
43	0.03	7.22	0.10		0.19	9.55	0.58		0.13	18.82	0.45		0.69	10.16	2.26	*	0.56	18.38	1.53		0.78	21.67	2.51	*
44	0.04	7.26	0.16		0.09	9.64	0.27		0.11	18.93	0.38		-0.31	9.85	-1.04		-0.38	18.00	-1.02		-0.22	21.45	-0.70	
45	0.17	7.43	0.64		0.33	9.97	0.97		0.23	19.16	0.85		-0.51	9.34	-1.69		-0.22	17.78	-0.60		-0.37	21.08	-1.20	
46	0.31	7.75	1.16		0.06	10.03	0.18		0.42	19.58	1.52		-0.36	8.97	-1.20		-0.34	17.44	-0.92		-0.35	20.73	-1.13	
47	-0.29	7.46	-1.06		-0.50	9.53	-1.49		-0.21	19.37	-0.78		0.28	9.25	0.92		0.43	17.88	1.18		0.42	21.15	1.35	
48	-0.10	7.36	-0.37		-0.20	9.33	-0.59		0.01	19.38	0.04		0.13	9.38	0.43		0.26	18.13	0.69		0.29	21.44	0.95	
49	-0.18	7.18	-0.66		-0.30	9.03	-0.90		-0.09	19.29	-0.32		-0.38	8.99	-1.27		-0.19	17.94	-0.52		-0.27	21.17	-0.88	
50	-0.47	6.71	-1.73		-0.60	8.42	-1.79		-0.35	18.94	-1.29		-0.31	8.68	-1.04		-0.22	17.72	-0.60		-0.22	20.95	-0.71	
51	0.47	7.18	1.73		0.52	8.94	1.54		0.57	19.50	2.06	*	-0.04	8.64	-0.14		-0.16	17.56	-0.44		0.04	20.99	0.12	
52	-0.25	6.93	-0.92		-0.33	8.61	-0.99		-0.16	19.35	-0.56		0.22	8.85	0.71		0.61	18.17	1.66		0.37	21.35	1.18	
53	0.02	6.96	0.09		0.21	8.82	0.62		0.11	19.45	0.40		-0.01	8.85	-0.02		-0.21	17.96	-0.56		0.10	21.46	0.34	
54	-0.51	6.45	-1.89		-0.18	8.64	-0.53		-0.47	18.99	-1.69		0.09	8.93	0.29		0.16	18.12	0.42		0.14	21.60	0.47	
55	-0.01	6.43	-0.05		-0.33	8.30	-0.99		0.04	19.03	0.14		0.22	9.15	0.72		-0.04	18.08	-0.11		0.31	21.91	0.99	
56	-0.17	6.26	-0.64		-0.52	7.79	-1.53		-0.06	18.97	-0.22		0.08	9.23	0.27		-0.05	18.03	-0.13		0.26	22.17	0.85	
57	-0.16	6.10	-0.60		0.02	7.81	0.07		-0.01	18.96	-0.03		-0.54	8.69	-1.79		-0.54	17.49	-1.48		-0.35	21.82	-1.13	
58	-0.21	5.89	-0.77		-0.37	7.44	-1.10		-0.08	18.87	-0.31		0.20	8.89	0.67		-0.04	17.44	-0.12		0.20	22.02	0.66	
59	0.16	6.05	0.60		-0.26	7.18	-0.76		0.27	19.14	0.97		-0.25	8.64	-0.84		0.21	17.65	0.58		-0.14	21.88	-0.46	
60	0.14	6.19	0.52		0.26	7.45	0.78		0.28	19.42	1.01		-0.41	8.23	-1.34		-0.50	17.16	-1.35		-0.29	21.59	-0.93	

** Significant at 0.01 level; * Significant at 0.05 level

the non-industrial group), whereas significant positive abnormal returns are seen at day-9, -4, -3, -1 and day 0 for the industrial group.

Compared to the empirical results presented in Chapter 4 and Section 5.3.1, where price adjustments were seen as early as day -55 and -54 across different markets, it is now safe to conclude that early adjustments were from those non-industrial targets classified as non-industrial, which include "Commercial," "Real Estate," "Utilities," "Financial" and "Miscellaneous" sections. Collectively, share prices of these firms are influenced by more factors than those of "Industrial" firms. This might explain the earlier and more frequent abnormal returns appearing in the non-industrial group in the sample.

Figure 5.3.2a and 5.3.2b below graphically present the CAARs throughout the 121-day window, for the industrial group and the non-industrial group, respectively.

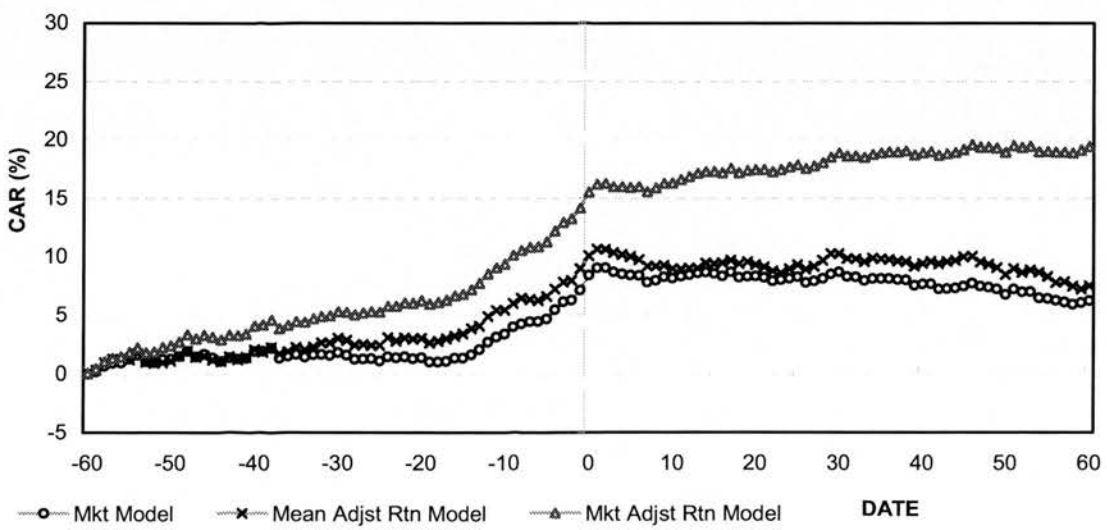

Figure 5.3.2a CAAR for Industrial group

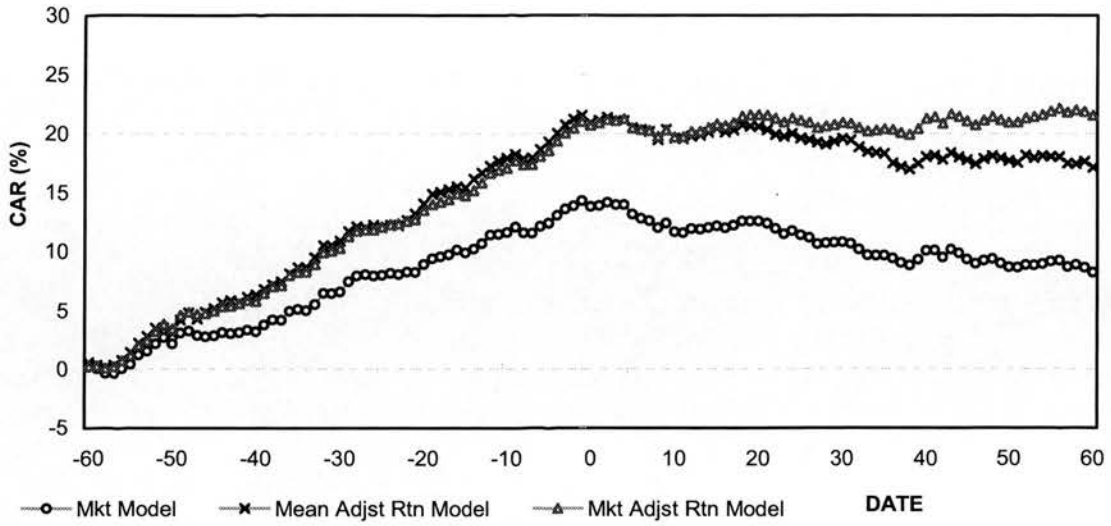

Figure 5.3.2b CAAR for Non-Industrial group

Table 5.3.2b presents the CAARs for six different event windows centred on day 0 for both groups. It clearly shows that significant positive CAARs are recognised for the industrial group for the event period day-60 to day+60, day-20 to day+20, day-10 to day+10, day-5 to day+5 and day-1 to day+1. On the contrary, no significant positive CAARs were identified for the non-industrial group for the latter three windows.

Table 5.3.2c further shows that significant positive CAARs appear in all pre-event windows for the two groups, indicating that market anticipates the forthcoming corporate restructurings as "value-adding" for both non-industrial and industrial companies. Whereas the non-industrial group's CAAR over day-60 to day-1 is 14.32%, the industrial group's CAAR is only 7.10% for the same period. This indicates that the market may have different expectations towards different industries. It perhaps anticipates that a restructuring is more likely to happen to a non-industrial firm or that if taken over, a non-industrial target will be led to a greater improvement in

Table 5.3.2b CAAR for Industry Effect Subgroup

	Industrial: 97 in total									NonIndustrial: 63 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - +60 (121 days)	6.19%	2.08	*	7.45%	2.00	*	19.42%	6.42	** *	8.23%	2.47	*	17.16%	4.23	** *	21.59%	6.34	** *
-20 - +20 (41 days)	7.01%	4.05	** *	6.32%	2.92	** *	11.45%	6.50	** *	4.32%	2.23	*	7.40%	3.14	** *	8.89%	4.49	** *
-10 - +10 (21 days)	4.98%	4.02	** *	3.53%	2.27	*	7.26%	5.76	** *	0.19%	0.14		1.94%	1.15		2.81%	1.98	
-5 - +5 (11 days)	3.96%	4.42	** *	3.75%	3.35	** *	5.09%	5.58	** *	1.01%	1.01		1.88%	1.54		2.43%	2.37	*
-1 - +1 (3 days)	2.73%	5.82	*	2.70%	4.62	*	2.98%	6.25	*	0.02%	0.04		-0.12%	-0.18		0.47%	0.87	
-1 - 0 (2 days)	2.09%	5.47		2.12%	4.43		2.29%	5.88		-0.04%	-0.09		-0.34%	-0.65		0.25%	0.58	

** Significant at 0.01 level * Significant at 0.05 level

Table 5.3.2c Pre- and Post-Event CAAR for Industry Effect Subgroup

	Industrial: 97 in total									NonIndustrial: 63 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - -1 (60 days)	7.10%	3.39	** *	8.97%	3.43	** *	14.14%	6.64	** *	14.32%	6.10	** *	21.55%	7.55	** *	21.03%	8.77	** *
+1 - +60 (60 days)	-2.19%	-1.05		-2.62%	-1.00		3.90%	1.83		-5.60%	-2.39	*	-3.75%	-1.31		0.89%	0.37	
-20 - -1 (20 days)	5.63%	4.79	** *	5.92%	3.97	** *	8.12%	6.62	** *	6.05%	4.49	** *	8.89%	5.07	** *	8.43%	6.00	** *
+1 - +20 (20 days)	-0.07%	-0.06		-0.78%	-0.51		1.93%	1.57		-1.27%	-0.94		-0.31%	-0.19		0.91%	0.66	
-10 - -1 (10 days)	3.96%	4.63	** *	3.56%	3.33	** *	5.10%	5.86	** *	2.84%	2.96	*	3.87%	3.32	** *	4.14%	4.23	** *
+1 - +10 (10 days)	-0.26%	-0.31		-1.13%	-1.06		0.79%	0.91		-2.16%	-2.25		-1.28%	-1.10		-1.00%	-1.02	
-5 - -1 (5 days)	2.64%	4.37	** *	2.72%	3.60	*	3.27%	5.32	** *	2.16%	3.19	*	2.90%	3.53	*	2.97%	4.29	** *
+1 - +5 (5 days)	0.03%	0.06		-0.06%	-0.08		0.44%	0.72		-0.65%	-0.96		-0.38%	-0.47		-0.20%	-0.30	

** Significant at 0.01 level * Significant at 0.05 level

performance/profitability compared to those industrial ones. This is not surprising because different industries, after all, bear different risks. A related interpretation is perhaps that non-industrial companies are underperforming and underpriced compared to the non-industrial group, which remains untested but a future research topic.

The market, however, may be overly optimistic in evaluating the forthcoming restructurings involving non-industrial companies. Notice that a significant negative CAAR of -5.6% was identified for the non-industrial group between day+1 to day+60. This could indicate the over-reaction of the market prior to the event.

Overall, A share shareholders within the industrial group seem to benefit more from such activities and the market appears to view a takeover of non-industrial targets as more "value-adding" than when industrial firms are targeted. Indeed, Table 5.3.2d below attempts to test if the AARs are different for these two groups, i.e. industrial and non-industrial.

T-stat values presented in the table below provide limited evidence. The degree of average abnormal returns for the target firms are statistically different for the two groups only for the pre-event window day-60 to day-1, indicated by the bold t-value. The abnormal returns do not appear to be different across all other event windows. The null hypothesis of equality of the mean abnormal returns for targets from different industries therefore is rejected for the pre-event window from day-60 to day-1, but not to other periods.

Table 5.3.2d T-Test for Industry Effect Subgroup

	Industrial	*Non-Ind.*	*Industrial*	*Non-Ind.*	*Industrial*	*Non-Ind.*
	(Day-60 - Day+60)		(Day-60 - Day-1)		(Day+1 - Day+60)	
Mean	0.0512	0.0680	0.1183	0.2387	-0.0366	-0.0933
Variance	0.1024	0.1456	0.1019	0.1211	0.0680	0.1136
Observations	121		60		60	
Pearson Correlation	0.1609		0.1648		0.0836	
Hypothesized Mean Difference	0		0		0	
df	120		59		59	
t Stat	-0.4064		**-2.1610**		1.0760	
P(T<=t) one-tail	0.3426		0.0174		0.1432	
t Critical one-tail	1.6577		1.6711		1.6711	
P(T<=t) two-tail	0.6852		0.0348		0.2863	
t Critical two-tail	1.9799		2.0010		2.0010	
	(Day-20 - Day+20)		(Day-20 - Day-1)		(Day+1 - Day+20)	
Mean	0.1710	0.1054	0.2897	0.3042	-0.0035	-0.0635
Variance	0.1362	0.1478	0.0917	0.1006	0.0826	0.1202
Observations	41		20		20	
Pearson Correlation	0.2284		0.2916		0.1956	
Hypothesized Mean Difference	0		0		0	
df	40		19		19	
t Stat	0.8977		-0.1754		0.6638	
P(T<=t) one-tail	0.1873		0.4313		0.2574	
t Critical one-tail	1.6839		1.7291		1.7291	
P(T<=t) two-tail	0.3747		0.8626		0.5148	
t Critical two-tail	2.0211		2.0930		2.0930	
	(Day-10 - Day+10)		(Day-10 - Day-1)		(Day+1 - Day+10)	
Mean	0.2373	0.0090	0.3957	0.2840	-0.0262	-0.2159
Variance	0.1945	0.2072	0.0873	0.1235	0.1173	0.1688
Observations	21		10		10	
Pearson Correlation	0.3162		0.4325		0.2869	
Hypothesized Mean Difference	0		0		0	
df	20		9		9	
t Stat	1.9960		1.0162		1.3236	
P(T<=t) one-tail	0.0299		0.1680		0.1091	
t Critical one-tail	1.7247		1.8331		1.8331	
P(T<=t) two-tail	0.0597		0.3361		0.2183	
t Critical two-tail	2.0860		2.2622		2.2622	
	(Day-5 - Day+5)		(Day-5 - Day-1)		(Day+1 - Day+5)	
Mean	0.3603	0.0922	0.5284	0.4317	0.0068	-0.1304
Variance	0.2601	0.1951	0.1011	0.0256	0.1425	0.1708
Observations	11		5		5	
Pearson Correlation	0.2334		0.8986		0.3301	
Hypothesized Mean Difference	0		0		0	
df	10		4		4	
t Stat	1.5029		1.1516		0.6686	
P(T<=t) one-tail	0.0819		0.1568		0.2702	
t Critical one-tail	1.8125		2.1318		2.1318	
P(T<=t) two-tail	0.1638		0.3136		0.5403	
t Critical two-tail	2.2281		2.7764		2.7764	
	(Day-1 - Day+1)				(Day-1 - Day0)	
Mean	0.9084	0.0075			1.0453	-0.0184
Variance	0.1149	0.2264			0.1174	0.4488
Observations	3				2	
Pearson Correlation	-0.7774				-1	
Hypothesized Mean Difference	0				0	
df	2				1	
t Stat	2.0277				1.4857	
P(T<=t) one-tail	0.0899				0.1886	
t Critical one-tail	2.9200				6.3138	
P(T<=t) two-tail	0.1798				0.3772	
t Critical two-tail	4.3027				12.7062	

5.3.3 Time Line

The 1st July 1999 (The Securities Law became effective) was chosen as the dividing creation here to form two sub-groups according to the time when M&As were announced. Detailed AARs and their t-values are presented in Table 5.3.3a below.

Important regulatory changes would undoubtedly affect the financial markets and M&A activities. As it shows by Table 5.3.3a, there are clear differences between the two sub-groups.

A number of significant positive abnormal returns are acknowledged by the Market Model at 95% confidence level for the post-law group approaching the event date (day-49, -48, -37, -32, -20, -13, -12, -6, -4, -3, and relatively large significant positive abnormal returns on day-1 and day 0). On the other hand, only five significant positive abnormal returns are identified at day-54, -52, -47 and closer to the event at day-4 and day-3 at the same confidence level for the pre-law group. Notice that there were no significant abnormal returns in day-1 to day 0 for the Pre-Law group but there were positive abnormal returns on these days for the Post-Law group.

This would appear to suggest that after the change in the law, greater information leakage occurred than in the earlier regime. Before rushing to a conclusion, it is perhaps worth clarifying that the Chinese stock market, especially in its starting period, was known to be an irrational one. Share prices were often pushed away from their fundamental values and short-term speculative investing behaviours were very common. Earlier tests of the EMH in the Chinese context often concluded that the

Table 5.3.3a AAR and CAAR (Day-60 to Day+60) for TimeLine Subgroup

	Time Line (Pre-1st July 1999): 71 in total												Time Line (Pro-1st July 1999): 89 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-60	0.21	0.21	0.69		0.24	0.24	0.66		0.35	0.35	1.12		-0.07	-0.07	-0.27		0.27	0.27	0.84		0.00	0.00	0.00	
-59	0.22	0.44	0.73		0.27	0.51	0.73		0.37	0.72	1.20		-0.05	-0.12	-0.21		-0.05	0.22	-0.16		0.12	0.12	0.46	
-58	0.25	0.68	0.81		0.41	0.92	1.10		0.36	1.07	1.15		0.06	-0.06	0.23		0.21	0.42	0.66		0.22	0.34	0.83	
-57	0.46	1.15	1.50		0.54	1.46	1.47		0.55	1.62	1.79		-0.10	-0.16	-0.38		0.01	0.44	0.04		-0.02	0.32	-0.06	
-56	0.58	1.72	1.88		0.42	1.88	1.15		0.69	2.31	2.22	*	-0.13	-0.30	-0.52		-0.01	0.43	-0.02		-0.06	0.26	-0.23	
-55	0.50	2.23	1.63		0.36	2.24	0.98		0.57	2.87	1.84		0.20	-0.10	0.78		0.12	0.55	0.39		0.28	0.55	1.08	
-54	0.78	3.00	2.52	*	0.76	3.01	2.07	*	0.88	3.75	2.84	** *	0.29	0.20	1.15		0.53	1.08	1.67		0.33	0.87	1.25	
-53	0.02	3.03	0.08		0.07	3.08	0.19		0.16	3.91	0.53		-0.36	-0.16	-1.41		-0.44	0.64	-1.40		-0.28	0.60	-1.06	
-52	0.60	3.63	1.97	*	0.32	3.40	0.88		0.71	4.63	2.32	*	-0.14	-0.30	-0.53		0.14	0.78	0.44		0.03	0.63	0.13	
-51	0.60	4.23	1.94		0.13	3.53	0.36		0.69	5.32	2.25	*	0.19	-0.11	0.76		-0.05	0.72	-0.17		0.30	0.93	1.16	
-50	-0.02	4.21	-0.07		-0.22	3.31	-0.61		0.08	5.40	0.25		-0.34	-0.44	-1.31		0.00	0.72	-0.01		-0.18	0.75	-0.70	
-49	0.27	4.48	0.88		0.47	3.78	1.28		0.48	5.88	1.56		0.67	0.23	2.62	** *	0.94	1.66	2.99	** *	0.79	1.53	2.99	** *
-48	-0.14	4.34	-0.44		0.00	3.78	0.01		0.04	5.91	0.12		0.72	0.95	2.81	** *	0.86	2.52	2.72	** *	0.84	2.37	3.19	** *
-47	-0.68	3.66	-2.21	*	-0.92	2.86	-2.51	*	-0.45	5.46	-1.47		-0.25	0.70	-0.97		-0.18	2.34	-0.56		-0.14	2.23	-0.54	
-46	0.09	3.75	0.30		0.26	3.11	0.70		0.22	5.68	0.72		0.08	0.78	0.32		0.31	2.65	0.97		0.19	2.42	0.72	
-45	0.21	3.96	0.69		0.38	3.49	1.02		0.31	5.99	1.00		-0.42	0.36	-1.66		-0.45	2.20	-1.43		-0.30	2.12	-1.15	
-44	0.27	4.23	0.86		0.53	4.02	1.44		0.43	6.43	1.41		-0.34	0.02	-1.33		-0.22	1.98	-0.70		-0.29	1.83	-1.09	
-43	-0.07	4.16	-0.23		0.10	4.12	0.27		0.04	6.47	0.14		0.30	0.32	1.17		0.46	2.44	1.47		0.39	2.22	1.47	
-42	-0.22	3.94	-0.70		-0.42	3.70	-1.15		-0.10	6.37	-0.32		0.11	0.43	0.44		-0.05	2.39	-0.15		0.21	2.43	0.80	
-41	-0.07	3.87	-0.23		0.01	3.70	0.02		0.04	6.42	0.14		0.33	0.76	1.29		0.58	2.97	1.83		0.32	2.75	1.22	
-40	0.11	3.98	0.36		0.20	3.90	0.54		0.23	6.64	0.73		0.44	1.20	1.72		0.63	3.60	2.02	*	0.50	3.25	1.90	
-39	0.16	4.14	0.52		-0.05	3.85	-0.14		0.29	6.93	0.94		0.28	1.48	1.08		0.16	3.76	0.51		0.32	3.56	1.20	
-38	0.51	4.65	1.66		0.42	4.27	1.13		0.64	7.57	2.07	*	0.20	1.67	0.77		0.37	4.13	1.17		0.39	3.95	1.48	
-37	-0.45	4.20	-1.47		-0.26	4.01	-0.70		-0.33	7.24	-1.06		-0.59	1.08	-2.31	*	-0.20	3.93	-0.62		-0.47	3.48	-1.79	
-36	0.27	4.47	0.88		0.37	4.38	1.01		0.40	7.64	1.28		0.50	1.58	1.94		0.40	4.34	1.28		0.60	4.09	2.30	*

Table 5.3.3a (Cont.)

	Time Line (Pre-1st July 1999): 71 in total												Time Line (Pro-1st July 1999): 89 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-35	0.08	4.55	0.25		0.28	4.67	0.77		0.21	7.85	0.69		0.20	1.78	0.80		0.53	4.87	1.69		0.33	4.42	1.27	
-34	0.13	4.68	0.41		0.20	4.87	0.55		0.32	8.17	1.03		-0.42	1.36	-1.62		-0.39	4.48	-1.25		-0.29	4.13	-1.11	
-33	0.15	4.83	0.49		0.19	5.06	0.51		0.30	8.47	0.96		0.46	1.83	1.81		0.69	5.16	2.19	*	0.55	4.68	2.11	*
-32	0.08	4.90	0.25		0.09	5.14	0.23		0.19	8.66	0.62		0.63	2.46	2.45	*	1.05	6.22	3.35	** *	0.77	5.45	2.93	** *
-31	-0.33	4.58	-1.06		-0.34	4.80	-0.92		-0.14	8.52	-0.44		0.18	2.64	0.69		0.29	6.51	0.93		0.25	5.70	0.95	
-30	0.14	4.71	0.45		0.34	5.15	0.93		0.28	8.80	0.92		0.23	2.86	0.88		0.38	6.89	1.21		0.34	6.04	1.29	
-29	0.44	5.15	1.42		0.44	5.59	1.20		0.59	9.39	1.92		0.06	2.92	0.23		0.06	6.95	0.18		0.18	6.22	0.68	
-28	-0.21	4.94	-0.68		-0.19	5.39	-0.53		-0.01	9.39	-0.03		0.10	3.02	0.41		-0.03	6.92	-0.10		0.08	6.30	0.32	
-27	-0.45	4.49	-1.45		-0.55	4.84	-1.49		-0.34	9.05	-1.09		0.46	3.49	1.81		0.45	7.37	1.42		0.53	6.83	2.00	*
-26	0.10	4.60	0.33		0.41	5.25	1.11		0.19	9.24	0.60		-0.13	3.36	-0.50		-0.25	7.11	-0.81		-0.02	6.81	-0.07	
-25	-0.05	4.54	-0.18		0.06	5.31	0.17		0.09	9.33	0.29		-0.11	3.25	-0.43		-0.18	6.93	-0.57		0.04	6.85	0.16	
-24	0.08	4.62	0.26		0.30	5.61	0.80		0.23	9.56	0.75		0.43	3.68	1.69		0.62	7.55	1.96	*	0.52	7.38	1.99	*
-23	-0.12	4.50	-0.39		-0.31	5.30	-0.85		-0.01	9.55	-0.02		-0.08	3.60	-0.31		-0.07	7.48	-0.23		0.05	7.43	0.20	
-22	0.54	5.04	1.76		0.78	6.08	2.13	*	0.67	10.22	2.17	*	-0.17	3.44	-0.66		-0.04	7.44	-0.12		-0.09	7.33	-0.36	
-21	-0.19	4.85	-0.62		0.30	6.38	0.82		-0.03	10.19	-0.09		-0.05	3.38	-0.21		0.04	7.48	0.13		0.08	7.41	0.29	
-20	-0.17	4.68	-0.55		0.09	6.47	0.23		0.00	10.19	0.00		0.70	4.08	2.73	** *	0.62	8.10	1.96		0.79	8.20	3.02	** *
-19	-0.30	4.38	-0.99		-0.17	6.30	-0.46		-0.14	10.05	-0.45		0.20	4.28	0.77		0.28	8.38	0.89		0.18	8.38	0.68	
-18	0.00	4.38	0.02		0.27	6.57	0.73		0.16	10.21	0.51		0.11	4.39	0.42		0.05	8.43	0.17		0.15	8.53	0.56	
-17	0.00	4.38	0.00		0.03	6.60	0.09		0.13	10.34	0.43		0.18	4.57	0.71		0.36	8.79	1.15		0.29	8.82	1.09	
-16	0.34	4.72	1.09		0.37	6.97	0.99		0.48	10.82	1.56		0.31	4.88	1.21		0.14	8.94	0.46		0.36	9.17	1.36	
-15	0.03	4.75	0.11		0.26	7.23	0.71		0.13	10.95	0.42		-0.18	4.70	-0.71		-0.08	8.86	-0.25		-0.09	9.09	-0.34	
-14	0.11	4.87	0.37		0.35	7.58	0.96		0.27	11.22	0.86		0.41	5.11	1.62		0.71	9.57	2.26	*	0.51	9.60	1.96	
-13	0.23	5.10	0.75		0.26	7.84	0.70		0.40	11.62	1.30		0.66	5.77	2.57	*	0.42	9.99	1.34		0.74	10.34	2.82	** *
-12	0.57	5.66	1.85		0.72	8.56	1.95		0.70	12.32	2.28	*	0.73	6.50	2.87	** *	0.73	10.73	2.33	*	0.88	11.22	3.34	** *
-11	0.22	5.88	0.70		0.41	8.97	1.12		0.36	12.68	1.17		0.35	6.86	1.38		0.53	11.26	1.69		0.48	11.70	1.84	

Table 5.3.3a (Cont.)

	Time Line (Pre-1st July 1999): 71 in total												Time Line (Pro-1st July 1999): 89 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-10	0.52	6.40	1.70		0.51	9.48	1.39		0.62	13.29	2.00	*	-0.04	6.82	-0.16		-0.21	11.05	-0.65		0.00	11.70	-0.02	
-9	0.58	6.99	1.90		0.82	10.30	2.23	*	0.76	14.05	2.47	*	0.55	7.37	2.15	*	0.20	11.25	0.64		0.68	12.38	2.59	** *
-8	0.12	7.11	0.39		0.38	10.68	1.03		0.34	14.39	1.10		-0.20	7.17	-0.78		-0.08	11.17	-0.26		-0.08	12.29	-0.31	
-7	0.09	7.20	0.28		0.18	10.86	0.50		0.20	14.59	0.65		0.12	7.29	0.46		-0.23	10.94	-0.74		0.11	12.41	0.43	
-6	-0.14	7.06	-0.44		-0.34	10.52	-0.93		-0.03	14.56	-0.10		0.55	7.83	2.13	*	0.68	11.61	2.15	*	0.61	13.02	2.31	*
-5	0.47	7.53	1.53		0.66	11.18	1.80		0.63	15.20	2.06	*	0.05	7.89	0.20		0.30	11.92	0.96		0.29	13.30	1.09	
-4	0.84	8.37	2.72	** *	0.64	11.82	1.73		0.96	16.16	3.12	** *	0.67	8.56	2.63	** *	0.68	12.60	2.16	*	0.81	14.12	3.10	** *
-3	0.68	9.05	2.21	*	0.64	12.46	1.75		0.83	16.99	2.68	** *	0.53	9.09	2.07	*	0.68	13.27	2.15	*	0.62	14.73	2.35	*
-2	0.53	9.58	1.74		0.48	12.94	1.30		0.70	17.69	2.27	*	-0.06	9.03	-0.22		0.10	13.37	0.32		0.05	14.78	0.19	
-1	0.13	9.71	0.43		0.36	13.31	0.99		0.29	17.97	0.93		1.09	10.12	4.26	** *	1.04	14.42	3.31	** *	1.18	15.96	4.48	** *
0	0.07	9.78	0.22		-0.05	13.25	-0.15		0.20	18.18	0.66		1.00	11.12	3.91	** *	0.78	15.20	2.48	*	1.10	17.06	4.19	** *
1	0.42	10.21	1.38		0.52	13.77	1.40		0.51	18.68	1.64		0.39	11.52	1.54		0.38	15.58	1.21		0.50	17.57	1.92	
2	-0.04	10.17	-0.13		0.28	14.05	0.77		0.09	18.77	0.29		0.26	11.78	1.02		-0.04	15.53	-0.14		0.21	17.78	0.81	
3	-0.75	9.41	-2.45	*	-0.64	13.41	-1.74		-0.60	18.17	-1.94		0.08	11.86	0.31		0.01	15.54	0.03		0.13	17.91	0.49	
4	-0.68	8.74	-2.20	*	-0.71	12.70	-1.93		-0.48	17.69	-1.56		0.37	12.23	1.44		0.40	15.94	1.25		0.49	18.40	1.88	
5	-0.53	8.21	-1.71		-0.68	12.02	-1.84		-0.47	17.22	-1.51		-0.27	11.95	-1.06		-0.10	15.84	-0.33		-0.24	18.16	-0.93	
6	-0.12	8.09	-0.38		-0.09	11.93	-0.25		0.13	17.35	0.41		-0.20	11.75	-0.80		-0.34	15.50	-1.08		-0.14	18.02	-0.51	
7	-0.77	7.33	-2.49	*	-0.65	11.29	-1.75		-0.61	16.74	-1.99	*	-0.20	11.55	-0.77		-0.23	15.27	-0.72		-0.05	17.97	-0.20	
8	-0.10	7.23	-0.32		-0.13	11.16	-0.34		0.00	16.74	0.01		-0.17	11.39	-0.65		-0.41	14.86	-1.31		0.01	17.99	0.05	
9	0.45	7.68	1.47		0.65	11.81	1.77		0.64	17.38	2.07	*	0.22	11.61	0.87		0.17	15.02	0.53		0.28	18.26	1.06	
10	-0.43	7.25	-1.40		-0.44	11.37	-1.19		-0.27	17.11	-0.86		-0.28	11.33	-1.08		-0.47	14.56	-1.49		-0.20	18.07	-0.76	

Table 5.3.3a (Cont.)

	Time Line (Pre-1st July 1999): 71 in total												Time Line (Pro-1st July 1999): 89 in total									
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
11	0.03	7.28	0.10		0.17	11.54	0.45		0.18	17.30	0.60		0.09	11.43	0.37		-0.20	14.36	-0.63		0.20	18.26	0.75	
12	-0.06	7.22	-0.19		-0.09	11.45	-0.25		0.11	17.40	0.34		0.45	11.88	1.76		0.33	14.68	1.04		0.50	18.77	1.91	
13	0.61	7.83	1.97	*	0.62	12.07	1.67		0.75	18.15	2.43	*	-0.33	11.55	-1.29		-0.41	14.27	-1.30		-0.27	18.49	-1.04	
14	0.22	8.05	0.71		0.58	12.65	1.58		0.43	18.58	1.41		-0.01	11.54	-0.03		0.18	14.46	0.58		0.08	18.57	0.29	
15	-0.53	7.52	-1.73		-0.36	12.29	-0.97		-0.33	18.25	-1.07		0.36	11.90	1.40		0.46	14.92	1.46		0.45	19.02	1.73	
16	-0.15	7.37	-0.48		0.00	12.29	-0.01		-0.05	18.20	-0.16		-0.24	11.66	-0.93		-0.16	14.76	-0.50		-0.18	18.84	-0.70	
17	0.46	7.83	1.51		0.41	12.69	1.11		0.46	18.66	1.48		0.17	11.83	0.65		0.02	14.78	0.07		0.25	19.09	0.94	
18	-0.32	7.51	-1.03		0.04	12.73	0.11		-0.13	18.53	-0.42		0.00	11.83	0.01		-0.03	14.75	-0.09		0.06	19.15	0.23	
19	-0.02	7.50	-0.06		0.11	12.84	0.29		0.16	18.69	0.52		0.11	11.94	0.45		0.00	14.75	0.00		0.16	19.31	0.63	
20	0.16	7.66	0.53		0.13	12.97	0.36		0.18	18.87	0.58		-0.10	11.84	-0.39		-0.40	14.35	-1.28		-0.04	19.27	-0.17	
21	-0.69	6.97	-2.23	*	-0.65	12.32	-1.77		-0.53	18.33	-1.73		0.29	12.14	1.15		0.14	14.48	0.43		0.40	19.67	1.54	
22	-0.40	6.57	-1.30		-0.38	11.95	-1.02		-0.27	18.07	-0.87		-0.32	11.82	-1.25		-0.36	14.12	-1.15		-0.18	19.49	-0.70	
23	-0.24	6.33	-0.79		-0.16	11.79	-0.43		-0.12	17.94	-0.39		-0.01	11.81	-0.04		-0.19	13.94	-0.59		0.08	19.57	0.32	
24	-0.08	6.25	-0.25		0.15	11.94	0.40		0.04	17.99	0.14		0.38	12.19	1.48		0.44	14.38	1.40		0.45	20.01	1.69	
25	-0.24	6.01	-0.77		0.05	11.98	0.12		-0.12	17.87	-0.38		0.09	12.28	0.35		0.08	14.46	0.27		0.16	20.18	0.62	
26	-0.41	5.60	-1.34		-0.15	11.83	-0.42		-0.27	17.60	-0.88		-0.37	11.91	-1.46		-0.38	14.08	-1.21		-0.28	19.90	-1.06	
27	0.09	5.69	0.30		0.43	12.25	1.16		0.21	17.80	0.67		-0.30	11.60	-1.19		-0.24	13.84	-0.75		-0.22	19.68	-0.84	
28	-0.08	5.61	-0.25		0.13	12.39	0.36		0.00	17.81	0.01		0.34	11.94	1.32		0.34	14.19	1.08		0.39	20.06	1.48	
29	0.63	6.25	2.05	*	0.98	13.37	2.66	** *	0.71	18.51	2.30	*	-0.03	11.91	-0.12		0.03	14.21	0.08		0.04	20.10	0.15	
30	0.30	6.54	0.96		0.41	13.78	1.11		0.55	19.07	1.79		-0.02	11.89	-0.06		-0.14	14.07	-0.46		0.08	20.18	0.31	
31	-0.47	6.07	-1.53		-0.57	13.20	-1.56		-0.36	18.70	-1.17		-0.17	11.72	-0.65		-0.09	13.97	-0.29		-0.06	20.12	-0.23	
32	-0.82	5.25	-2.65	** *	-1.18	12.02	-3.21	** *	-0.74	17.97	-2.40	*	0.27	12.00	1.07		0.49	14.47	1.57		0.37	20.50	1.42	
33	-0.75	4.50	-2.44	*	-0.34	11.68	-0.93		-0.52	17.45	-1.69		-0.06	11.94	-0.25		-0.28	14.19	-0.89		0.04	20.54	0.16	
34	0.03	4.53	0.08		0.15	11.83	0.41		0.18	17.62	0.57		0.12	12.05	0.46		0.16	14.34	0.50		0.19	20.73	0.73	
35	-0.18	4.35	-0.59		-0.12	11.71	-0.32		-0.12	17.51	-0.38		0.17	12.22	0.66		-0.04	14.30	-0.14		0.31	21.04	1.18	

Table 5.3.3a (Cont.)

	Time Line (Pre-1st July 1999): 71 in total												Time Line (Pro-1st July 1999): 89 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
36	-0.09	4.25	-0.30		-0.14	11.57	-0.38		0.09	17.60	0.29		-0.10	12.12	-0.40		-0.48	13.81	-1.54		-0.02	21.02	-0.07	
37	-0.17	4.08	-0.56		0.06	11.63	0.17		-0.04	17.56	-0.13		-0.23	11.89	-0.90		-0.42	13.39	-1.35		-0.14	20.88	-0.54	
38	-0.15	3.94	-0.47		0.06	11.70	0.17		-0.04	17.51	-0.14		-0.05	11.84	-0.20		-0.28	13.11	-0.90		0.03	20.91	0.11	
39	0.01	3.95	0.03		0.32	12.02	0.88		0.13	17.65	0.43		-0.18	11.66	-0.69		-0.32	12.79	-1.02		-0.15	20.76	-0.57	
40	-0.04	3.90	-0.13		-0.17	11.86	-0.45		0.11	17.76	0.35		0.67	12.33	2.63	** *	0.78	13.57	2.48	*	0.73	21.49	2.78	** *
41	-0.21	3.70	-0.67		0.20	12.05	0.54		-0.03	17.72	-0.10		0.17	12.50	0.66		0.11	13.68	0.35		0.24	21.73	0.92	
42	-0.67	3.03	-2.18	*	-0.33	11.72	-0.89		-0.51	17.22	-1.65		-0.37	12.13	-1.45		-0.22	13.46	-0.71		-0.30	21.43	-1.15	
43	0.18	3.20	0.58		0.20	11.92	0.54		0.23	17.45	0.74		0.37	12.50	1.46		0.45	13.91	1.43		0.50	21.93	1.92	
44	-0.40	2.81	-1.30		-0.50	11.43	-1.35		-0.34	17.11	-1.10		0.14	12.64	0.55		0.23	14.14	0.74		0.23	22.17	0.89	
45	-0.64	2.16	-2.09	*	-0.24	11.19	-0.65		-0.49	16.61	-1.61		0.34	12.98	1.32		0.39	14.53	1.25		0.39	22.55	1.47	
46	0.29	2.45	0.94		-0.04	11.15	-0.11		0.33	16.94	1.06		-0.14	12.84	-0.56		-0.14	14.39	-0.46		-0.05	22.50	-0.20	
47	-0.15	2.30	-0.48		0.11	11.25	0.29		-0.01	16.93	-0.03		0.00	12.84	0.01		-0.33	14.06	-1.04		0.07	22.57	0.27	
48	-0.05	2.26	-0.15		0.01	11.26	0.02		0.13	17.06	0.42		0.02	12.86	0.08		-0.04	14.02	-0.13		0.12	22.69	0.45	
49	-0.31	1.95	-1.00		-0.35	10.92	-0.94		-0.20	16.86	-0.64		-0.22	12.64	-0.87		-0.19	13.83	-0.61		-0.13	22.56	-0.49	
50	-0.15	1.80	-0.50		0.02	10.94	0.05		0.03	16.89	0.08		-0.61	12.03	-2.39	*	-0.83	13.00	-2.63	** *	-0.56	22.00	-2.14	*
51	0.34	2.14	1.12		0.38	11.31	1.03		0.45	17.34	1.47		0.20	12.23	0.80		0.15	13.15	0.47		0.28	22.28	1.08	
52	0.20	2.34	0.64		0.51	11.82	1.37		0.41	17.75	1.32		-0.28	11.96	-1.08		-0.34	12.81	-1.07		-0.24	22.04	-0.89	
53	-0.22	2.12	-0.73		0.16	11.98	0.44		-0.01	17.73	-0.04		0.20	12.15	0.78		-0.05	12.77	-0.15		0.20	22.24	0.77	
54	0.26	2.38	0.85		0.57	12.55	1.54		0.28	18.02	0.92		-0.70	11.45	-2.74	** *	-0.54	12.23	-1.70		-0.63	21.61	-2.41	*
55	0.26	2.64	0.84		-0.17	12.38	-0.47		0.35	18.37	1.13		-0.07	11.39	-0.26		-0.25	11.97	-0.81		-0.02	21.59	-0.08	
56	-0.05	2.59	-0.16		-0.46	11.91	-1.26		0.11	18.48	0.37		-0.09	11.29	-0.35		-0.23	11.75	-0.72		0.03	21.62	0.11	
57	-0.64	1.94	-2.08	*	-0.72	11.19	-1.96		-0.44	18.05	-1.41		-0.05	11.25	-0.19		0.22	11.96	0.69		0.09	21.71	0.34	
58	-0.09	1.86	-0.28		-0.31	10.89	-0.83		-0.01	18.04	-0.02		-0.02	11.23	-0.06		-0.19	11.77	-0.61		0.06	21.77	0.22	
59	0.12	1.98	0.38		0.12	11.00	0.32		0.29	18.33	0.94		-0.10	11.13	-0.38		-0.22	11.55	-0.70		-0.04	21.72	-0.16	
60	-0.08	1.90	-0.25		-0.06	10.94	-0.17		0.08	18.41	0.26		-0.07	11.06	-0.28		-0.01	11.53	-0.05		0.03	21.76	0.13	

** Significant at 0.01 level; * Significant at 0.05 level

market was not informationally efficient (Ma 2000). As shall be revealed later in this section, the pre-law market was unable to anticipate and adjust correctly to the forthcoming corporate restructuring activities.

Figure 5.3.3a and 5.3.3b below graphically show the CAARs for the two groups for day-60 to day+60. The following Table 5.3.3b further presents all CAARs for all six different event windows centred on day 0.

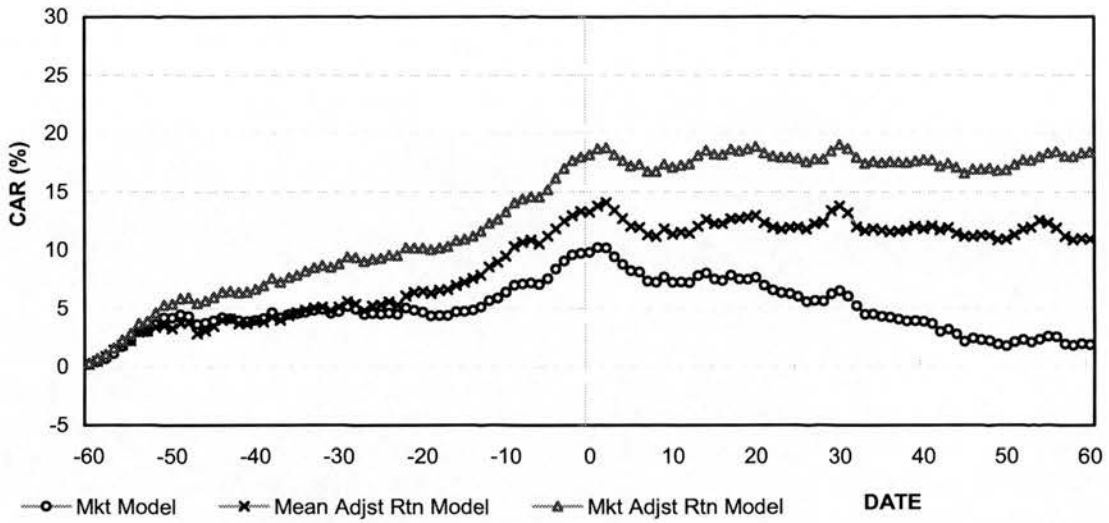

Figure 5.3.3a CAARs for Pre-Law Group

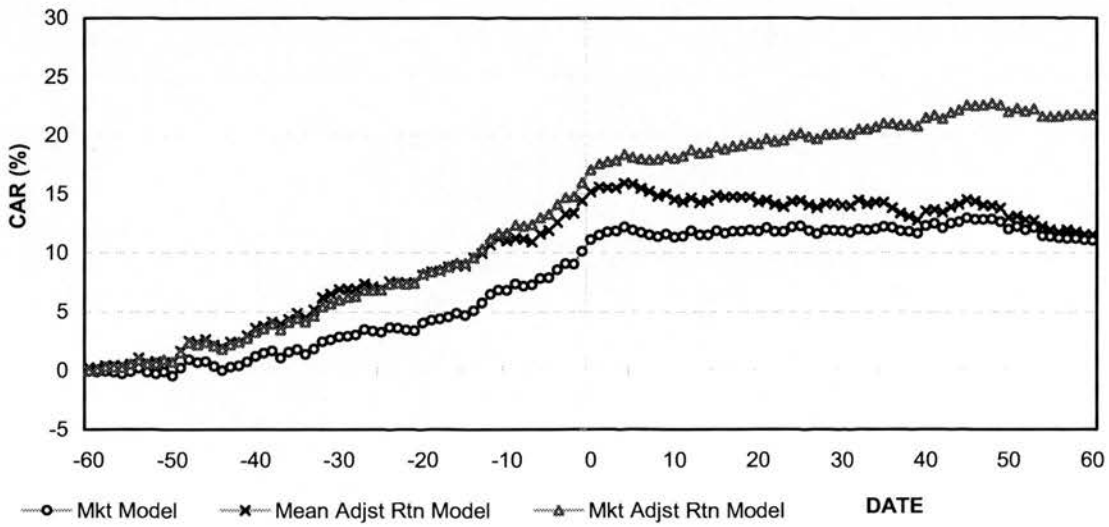

Figure 5.3.3b CAARs for Post-Law Group

Table 5.3.3b CAAR for Time Line Subgroup

	Time Line (Pre-1st July 1999): 71 in total									Time Line (Pro-1st July 1999): 89 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - +60 (121 days)	1.90%	0.56		10.94%	2.70	** *	18.41%	5.43	** *	11.06%	3.93	** *	11.53%	3.33	** *	21.76%	7.53	** *
-20 - +20 (41 days)	2.81%	1.42		6.59%	2.79	** *	8.68%	4.40	** *	8.46%	5.16	** *	6.87%	3.41	** *	11.85%	7.05	** *
-10 - +10 (21 days)	1.37%	0.97		2.41%	1.43		4.43%	3.14	** *	4.47%	3.81	** *	3.30%	2.29	*	6.37%	5.29	** *
-5 - +5 (11 days)	1.15%	1.13		1.50%	1.23		2.66%	2.60	*	4.12%	4.85	** *	4.22%	4.04	** *	5.14%	5.90	** *
-1 - +1 (3 days)	0.63%	1.18		0.83%	1.30		1.00%	1.87		2.49%	5.61	*	2.20%	4.04		2.78%	6.11	*
-1 - 0 (2 days)	0.20%	0.47		0.31%	0.59		0.49%	1.13		2.09%	5.78		1.82%	4.09		2.28%	6.13	

** Significant at 0.01 level * Significant at 0.05 level

Table 5.3.3c Pre- and Post-Event CAAR for Time Line Subgroup

	Time Line (Pre-1st July 1999): 71 in total									Time Line (Pro-1st July 1999): 89 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - -1 (60 days)	9.71%	4.07	** *	13.31%	4.66	** *	17.97%	7.53	** *	10.12%	5.11	** *	14.42%	5.91	** *	15.96%	7.84	** *
+1 - +60 (60 days)	-7.89%	-3.31	** *	-2.31%	-0.81		0.24%	0.10		-0.06%	-0.03		-3.66%	-1.50		4.70%	2.31	*
-20 - -1 (20 days)	4.67%	3.53	** *	7.23%	4.20	** *	7.75%	5.65	** *	6.69%	5.89	** *	6.98%	4.92	** *	8.63%	7.28	** *
+1 - +20 (20 days)	-2.13%	-1.54		-0.28%	-0.17		0.69%	0.50		0.72%	0.63		-0.85%	-0.60		2.20%	1.88	
-10 - -1 (10 days)	3.83%	3.94	** *	4.34%	3.73	** *	5.30%	5.43	** *	3.27%	4.03	** *	3.16%	3.17	*	4.26%	5.13	** *
+1 - +10 (10 days)	-2.54%	-2.60	*	-1.88%	-1.61		-1.07%	-1.09		0.21%	0.26		-0.64%	-0.64		1.00%	1.21	
-5 - -1 (5 days)	2.65%	3.86	*	2.79%	3.38	*	3.41%	4.95	** *	2.29%	4.00	*	2.80%	3.98	*	2.95%	5.01	** *
+1 - +5 (5 days)	-1.57%	-2.29		-1.23%	-1.49		-0.95%	-1.38		0.83%	1.45		0.64%	0.91		1.10%	1.87	

** Significant at 0.01 level * Significant at 0.05 level

Table 5.3.3b above indicates that although positive CAARs were identified for event windows centred by event day 0 for the pre-law group, none of them are significant. In clear contrast, significant CAARs were acknowledged for most event windows for the post-law group (day-60 to day+60; day-20 to day+20; day-5 to day+5 and day-1 to day+1). It is therefore tempting to conclude that M&As were not creating values for targets' shareholders before 1 July 1999, compared to the gains obtained by the shareholders of the targets after 1 July 1999.

However, the results from Table 5.3.3c above prove that above statement might not be entirely correct. Significant positive abnormal returns were indeed identified prior to the event date day 0 for the pre-law group (day-60 to day-1). Value was created for the targets' shareholders before 1 July 1999 by M&As. The significant negative abnormal returns immediately following the event date (day+1 to day+60) however offset the value created, thus resulting a non-significant abnormal return for period of day-60 to day+60. The pre-law market clearly over-reacted to the forthcoming corporate event and adjusted the share prices, presumably, to their fundamental values only after the event. The reason for this is most likely due to insider control as explained in Chapter 2. The share prices were gradually pushed to a higher value (away from the fundamental values) before the event (by the big players with access to the inside information) and when the event was eventually disclosed to the general public via official/unofficial channels, less-educated and poorly-informed smaller investors rushed in to buy. This strategy used by the big players/insiders has been well documented (Yao (1998), Ma (2000)). In addition, no significant negative CAARs are apparent in post-event periods for the post-law group. This indicates that the post-law market *fully* anticipated the forthcoming event, without the need for further

adjustment. It would however be naïve to state that the big players control or insider trading has disappeared all together.

Results from Table 5.3.3a, b and c reveal that the post-law market was anticipating and adjusting more promptly and more correctly than the pre-law market. As

Table 5.3.3d T-Test for Time Line Subgroup

	Pre-1/7/99	*Pro-1/7/99*	*Pre-1/7/99*	*Pro-1/7/99*	*Pre-1/7/99*	*Pro-1/7/99*
	(Day-60 - Day+60)		(Day-60 - Day-1)		(Day+1 - Day+60)	
Mean	0.0157	0.0914	0.1619	0.1687	-0.1314	-0.0010
Variance	0.1350	0.1086	0.1019	0.1212	0.1289	0.0709
Observations	121		60		60	
Pearson Correlation	0.1574		0.1353		-0.0253	
Hypothesized Mean Difference	0		0		0	
df	120		59		59	
t Stat	-1.8378		-0.1205		**-2.2325**	
P(T<=t) one-tail	0.0343		0.4523		0.0147	
t Critical one-tail	1.6577		1.6711		1.6711	
P(T<=t) two-tail	0.0686		0.9045		0.0294	
t Critical two-tail	1.9799		2.0010		2.0010	
	(Day-20 - Day+20)		(Day-20 - Day-1)		(Day+1 - Day+20)	
Mean	0.0684	0.2064	0.2431	0.3371	-0.1063	0.0360
Variance	0.1596	0.1261	0.0963	0.1204	0.1755	0.0634
Observations	41		20		20	
Pearson Correlation	0.2572		0.1215		0.0790	
Hypothesized Mean Difference	0		0		0	
df	40		19		19	
t Stat	-1.9147		-0.9625		-1.3496	
P(T<=t) one-tail	0.0314		0.1739		0.0965	
t Critical one-tail	1.6839		1.7291		1.7291	
P(T<=t) two-tail	0.0627		0.3479		0.1930	
t Critical two-tail	2.0211		2.0930		2.0930	
	(Day-10 - Day+10)		(Day-10 - Day-1)		(Day+1 - Day+10)	
Mean	0.0651	0.2130	0.3834	0.3265	-0.2536	0.0209
Variance	0.2375	0.1654	0.0970	0.1689	0.2054	0.0744
Observations	21		10		10	
Pearson Correlation	0.3676		0.0204		0.4106	
Hypothesized Mean Difference	0		0		0	
df	20		9		9	
t Stat	-1.3367		0.3520		-2.0552	
P(T<=t) one-tail	0.0982		0.3665		0.0350	
t Critical one-tail	1.7247		1.8331		1.8331	
P(T<=t) two-tail	0.1963		0.7329		0.0700	
t Critical two-tail	2.0860		2.2622		2.2622	
	(Day-5 - Day+5)		(Day-5 - Day-1)		(Day+1 - Day+5)	
Mean	0.1045	0.3746	0.5310	0.4579	-0.3148	0.1663
Variance	0.3059	0.1826	0.0692	0.2207	0.2480	0.0753
Observations	11		5		5	
Pearson Correlation	0.2931		-0.3101		0.4638	
Hypothesized Mean Difference	0		0		0	
df	10		4		4	
t Stat	-1.5141		0.2699		-2.4265	
P(T<=t) one-tail	0.0805		0.4003		0.0361	
t Critical one-tail	1.8125		2.1318		2.1318	
P(T<=t) two-tail	0.1609		0.8006		0.0723	
t Critical two-tail	2.2281		2.7764		2.7764	
	(Day-1 - Day+1)				(Day-1 - Day0)	
Mean	0.2091	0.8285			0.1013	1.0455
Variance	0.0359	0.1433			0.0021	0.0042
Observations	3				2	
Pearson Correlation	-0.9579				1	
Hypothesized Mean Difference	0				0	
df	2				1	
t Stat	-1.9065				**-69.4519**	
P(T<=t) one-tail	0.0984				0.0046	
t Critical one-tail	2.9200				6.3138	
P(T<=t) two-tail	0.1968				0.0092	
t Critical two-tail	4.3027				12.7062	

discussed in Chapter 2, the Securities Law has brought in regulatory improvement and the improvement is reflected in the post-law sub-group. Chinese securities markets are improving in terms of the regulatory environment and its efficiency. This finding agrees with findings such as that of Li et al. (2000) who conclude that the market efficiency improved from 1994 to 1999.

Table 5.3.3d above presents t-values for the null hypothesis test proposed in section 5.2.3. It is found that the t-stats are significant for event periods of day+1 to day+60 and day-1 to day 0, respectively, therefore rejecting the null hypothesis of equality of the mean abnormal returns for pre- and post-law targets for these event windows.

5.3.4 Firm Size

Compared to the previous three variables, "size effect" has been more intensively researched in the western literature. This section will attempt to investigate the affects of target size on abnormal returns around the M&A announcements in China.

According to Table 5.3.4a below, for bigger targets there are earlier significant (at 0.05 level, by the Market Model) abnormal returns (day-55, -54, -51, -48, -47, -21 and day-12) and more frequently towards the event day (day-9, day-5, day-4, day-2, day-1 and day 0). There were far fewer instances of significant abnormal returns prior to day-4 for smaller targets. This result is even clearer if using the 1% significance level. There appears to be more information [139] available for the bigger

[139] Note that the term "information" used here does not only refer to publicly available information, it might also include inside information such as plans for a takeover, and noise such as rumours, indirectly related news, wrong information, etc.

Table 5.3.4a AAR and CAAR (Day-60 to Day+60) for Firm Size Subgroup

	Target Size (Big): 80 in total												Target Size (Small): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-60	-0.16	-0.16	-0.60		0.09	0.09	0.29		-0.04	-0.04	-0.15		0.27	0.27	0.92		0.42	0.42	1.20		0.35	0.35	1.18	
-59	0.37	0.21	1.42		0.34	0.43	1.09		0.51	0.47	1.95		-0.23	0.04	-0.80		-0.16	0.26	-0.45		-0.04	0.30	-0.15	
-58	0.41	0.63	1.60		0.75	1.18	2.38	*	0.54	1.01	2.08	*	-0.12	-0.09	-0.43		-0.16	0.10	-0.45		0.02	0.32	0.05	
-57	0.23	0.85	0.88		0.38	1.56	1.20		0.33	1.34	1.27		0.07	-0.02	0.25		0.12	0.22	0.34		0.14	0.46	0.47	
-56	0.13	0.98	0.51		-0.03	1.53	-0.10		0.22	1.56	0.82		0.23	0.22	0.81		0.40	0.62	1.15		0.32	0.78	1.10	
-55	0.63	1.61	2.44	*	0.36	1.89	1.13		0.66	2.22	2.55	*	0.04	0.25	0.13		0.10	0.72	0.28		0.16	0.94	0.53	
-54	0.77	2.38	2.98	** *	1.01	2.90	3.23	** *	0.85	3.08	3.28	** *	0.25	0.50	0.85		0.25	0.97	0.71		0.29	1.22	0.97	
-53	-0.32	2.06	-1.24		-0.27	2.63	-0.85		-0.19	2.88	-0.74		-0.06	0.44	-0.21		-0.16	0.80	-0.46		0.03	1.25	0.10	
-52	-0.09	1.97	-0.35		-0.14	2.49	-0.46		-0.02	2.87	-0.07		0.48	0.92	1.65		0.58	1.39	1.68		0.69	1.94	2.33	*
-51	0.64	2.62	2.49	*	0.06	2.55	0.20		0.62	3.49	2.38	*	0.10	1.02	0.35		0.00	1.38	-0.01		0.33	2.27	1.13	
-50	-0.25	2.37	-0.96		0.03	2.58	0.09		-0.14	3.35	-0.52		-0.14	0.87	-0.50		-0.23	1.15	-0.66		0.00	2.27	-0.01	
-49	0.31	2.68	1.21		0.78	3.37	2.49	*	0.55	3.90	2.09	*	0.67	1.54	2.32	*	0.68	1.83	1.96	*	0.76	3.03	2.56	*
-48	0.75	3.43	2.91	** *	0.86	4.23	2.74	** *	0.86	4.76	3.32	** *	-0.07	1.47	-0.25		0.10	1.93	0.28		0.10	3.13	0.33	
-47	-0.62	2.82	-2.38	*	-0.67	3.55	-2.14	*	-0.49	4.27	-1.89		-0.26	1.21	-0.92		-0.34	1.59	-0.99		-0.07	3.06	-0.22	
-46	-0.20	2.61	-0.79		0.40	3.95	1.28		-0.05	4.22	-0.19		0.38	1.59	1.31		0.17	1.76	0.48		0.46	3.52	1.56	
-45	-0.10	2.52	-0.37		0.12	4.07	0.38		0.04	4.26	0.14		-0.19	1.40	-0.64		-0.29	1.47	-0.83		-0.10	3.42	-0.34	
-44	0.19	2.70	0.72		0.28	4.36	0.90		0.32	4.57	1.21		-0.33	1.07	-1.14		-0.06	1.41	-0.17		-0.25	3.17	-0.84	
-43	-0.05	2.65	-0.21		0.07	4.43	0.23		0.02	4.59	0.08		0.32	1.39	1.11		0.53	1.94	1.54		0.45	3.62	1.52	
-42	-0.01	2.64	-0.03		0.08	4.51	0.27		0.05	4.64	0.19		-0.06	1.34	-0.20		-0.51	1.43	-1.48		0.10	3.72	0.33	
-41	-0.09	2.55	-0.35		0.19	4.70	0.61		0.01	4.65	0.03		0.40	1.73	1.37		0.45	1.88	1.31		0.39	4.10	1.31	
-40	0.17	2.72	0.66		0.28	4.99	0.90		0.24	4.89	0.93		0.41	2.15	1.43		0.60	2.49	1.73		0.51	4.62	1.74	
-39	0.08	2.80	0.32		-0.12	4.87	-0.38		0.12	5.01	0.45		0.37	2.51	1.27		0.25	2.74	0.72		0.49	5.11	1.67	
-38	0.35	3.15	1.35		0.49	5.36	1.57		0.54	5.55	2.06	*	0.32	2.84	1.12		0.29	3.02	0.82		0.46	5.57	1.56	
-37	-0.31	2.84	-1.19		0.10	5.46	0.32		-0.17	5.37	-0.66		-0.75	2.09	-2.60	** *	-0.55	2.47	-1.58		-0.64	4.93	-2.17	*
-36	0.48	3.33	1.86		0.52	5.98	1.64		0.61	5.99	2.35	*	0.31	2.40	1.08		0.26	2.74	0.76		0.41	5.34	1.39	

Table 5.3.4a (Cont.)

	Target Size (Big): 80 in total												Target Size (Small): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-35	0.35	3.68	1.37		0.55	6.53	1.76		0.47	6.46	1.81		-0.06	2.34	-0.20		0.29	3.03	0.83		0.09	5.43	0.30	
-34	-0.11	3.57	-0.41		0.19	6.72	0.60		0.07	6.53	0.27		-0.25	2.09	-0.85		-0.44	2.58	-1.28		-0.11	5.31	-0.38	
-33	0.02	3.60	0.09		0.23	6.95	0.74		0.17	6.70	0.66		0.63	2.72	2.17	*	0.70	3.28	2.02	*	0.71	6.02	2.39	*
-32	0.07	3.67	0.29		0.35	7.31	1.13		0.22	6.92	0.84		0.69	3.41	2.40	*	0.89	4.18	2.58	*	0.81	6.83	2.73	** *
-31	-0.06	3.61	-0.24		0.20	7.51	0.64		0.04	6.96	0.13		-0.03	3.38	-0.10		-0.18	4.00	-0.51		0.12	6.95	0.41	
-30	0.14	3.75	0.54		0.38	7.89	1.21		0.27	7.23	1.03		0.23	3.62	0.81		0.35	4.35	0.99		0.36	7.30	1.21	
-29	0.14	3.89	0.52		-0.15	7.73	-0.49		0.26	7.49	1.00		0.32	3.93	1.10		0.61	4.96	1.76		0.46	7.77	1.57	
-28	0.43	4.32	1.67		0.40	8.13	1.26		0.49	7.97	1.87		-0.50	3.43	-1.73		-0.60	4.36	-1.73		-0.40	7.37	-1.36	
-27	0.23	4.54	0.88		0.15	8.28	0.49		0.29	8.26	1.11		-0.11	3.33	-0.37		-0.14	4.21	-0.42		0.00	7.37	0.00	
-26	0.08	4.62	0.31		0.21	8.49	0.66		0.21	8.47	0.82		-0.13	3.19	-0.46		-0.13	4.08	-0.37		-0.07	7.30	-0.23	
-25	-0.32	4.30	-1.26		-0.26	8.23	-0.83		-0.19	8.28	-0.73		0.15	3.35	0.54		0.12	4.20	0.33		0.32	7.62	1.08	
-24	0.34	4.64	1.32		0.49	8.72	1.57		0.46	8.74	1.77		0.21	3.56	0.74		0.46	4.66	1.31		0.32	7.94	1.10	
-23	-0.02	4.62	-0.09		-0.24	8.49	-0.75		0.11	8.85	0.42		-0.17	3.39	-0.59		-0.12	4.53	-0.35		-0.06	7.88	-0.20	
-22	0.25	4.86	0.96		0.44	8.93	1.41		0.35	9.21	1.36		0.04	3.43	0.15		0.21	4.75	0.61		0.14	8.02	0.46	
-21	-0.56	4.30	-2.17	*	-0.41	8.52	-1.30		-0.44	8.77	-1.67		0.33	3.77	1.14		0.72	5.47	2.08	*	0.50	8.52	1.69	
-20	0.44	4.74	1.69		0.58	9.10	1.83		0.57	9.35	2.20	*	0.19	3.96	0.67		0.18	5.65	0.53		0.31	8.83	1.04	
-19	-0.02	4.72	-0.08		-0.04	9.05	-0.14		-0.04	9.31	-0.14		-0.03	3.93	-0.10		0.21	5.86	0.60		0.11	8.94	0.37	
-18	0.29	5.01	1.14		0.35	9.40	1.12		0.39	9.70	1.50		-0.17	3.76	-0.59		-0.06	5.81	-0.16		-0.09	8.85	-0.30	
-17	0.04	5.05	0.14		-0.04	9.36	-0.13		0.15	9.85	0.56		0.16	3.92	0.57		0.48	6.28	1.37		0.29	9.14	0.98	
-16	0.05	5.10	0.21		-0.05	9.31	-0.15		0.07	9.92	0.27		0.59	4.51	2.04	*	0.53	6.81	1.53		0.76	9.89	2.56	*
-15	-0.11	5.00	-0.41		-0.02	9.30	-0.05		0.00	9.92	0.02		-0.07	4.45	-0.23		0.16	6.97	0.46		0.01	9.90	0.04	
-14	0.23	5.22	0.88		0.55	9.85	1.76		0.33	10.25	1.27		0.33	4.78	1.16		0.55	7.53	1.59		0.48	10.38	1.61	
-13	0.32	5.55	1.25		0.27	10.12	0.85		0.39	10.65	1.50		0.61	5.39	2.12	*	0.43	7.95	1.23		0.79	11.17	2.66	** *
-12	0.91	6.45	3.51	** *	0.99	11.11	3.16	** *	1.00	11.65	3.84	** *	0.42	5.81	1.44		0.46	8.41	1.32		0.60	11.76	2.02	*
-11	0.39	6.85	1.52		0.42	11.53	1.32		0.55	12.20	2.12	*	0.19	6.00	0.67		0.54	8.95	1.56		0.30	12.07	1.03	

Table 5.3.4a (Cont.)

	Target Size (Big): 80 in total												Target Size (Small): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-10	0.13	6.98	0.51		0.05	11.58	0.15		0.18	12.38	0.69		0.29	6.29	1.00		0.18	9.13	0.51		0.36	12.43	1.23	
-9	0.56	7.54	2.18	*	0.18	11.76	0.58		0.68	13.06	2.59	** *	0.57	6.86	1.97	*	0.77	9.90	2.21	*	0.76	13.19	2.56	*
-8	-0.07	7.47	-0.29		0.15	11.91	0.48		0.16	13.22	0.62		-0.04	6.82	-0.14		0.09	9.99	0.27		0.05	13.23	0.16	
-7	-0.11	7.35	-0.43		-0.41	11.51	-1.29		-0.07	13.15	-0.26		0.32	7.14	1.11		0.31	10.30	0.89		0.37	13.60	1.26	
-6	-0.04	7.32	-0.14		-0.03	11.48	-0.08		0.08	13.23	0.31		0.52	7.66	1.81		0.48	10.78	1.37		0.57	14.17	1.93	
-5	0.73	8.05	2.84	** *	1.07	12.56	3.42	** *	0.94	14.17	3.60	** *	-0.26	7.40	-0.89		-0.15	10.62	-0.44		-0.06	14.12	-0.19	
-4	0.72	8.77	2.77	** *	0.53	13.09	1.70		0.85	15.02	3.26	** *	0.77	8.18	2.68	** *	0.79	11.41	2.27	*	0.91	15.03	3.08	** *
-3	0.36	9.13	1.39		0.35	13.44	1.10		0.51	15.53	1.95		0.83	9.01	2.89	** *	0.98	12.39	2.82	** *	0.91	15.94	3.09	** *
-2	0.54	9.67	2.09	*	0.64	14.07	2.03	*	0.66	16.19	2.53	*	-0.13	8.88	-0.45		-0.10	12.29	-0.29		0.02	15.95	0.06	
-1	1.01	10.68	3.90	** *	1.03	15.11	3.29	** *	1.09	17.28	4.19	** *	0.32	9.21	1.12		0.45	12.74	1.29		0.47	16.43	1.60	
0	0.70	11.37	2.69	** *	0.37	15.47	1.16		0.79	18.07	3.03	** *	0.48	9.68	1.65		0.45	13.19	1.31		0.61	17.04	2.08	*
1	0.28	11.66	1.10		0.40	15.87	1.27		0.41	18.49	1.59		0.53	10.22	1.84		0.48	13.68	1.40		0.60	17.64	2.02	*
2	0.21	11.87	0.81		0.31	16.18	0.97		0.21	18.69	0.79		0.05	10.26	0.16		-0.10	13.57	-0.30		0.11	17.74	0.37	
3	-0.11	11.76	-0.43		-0.26	15.91	-0.84		-0.05	18.64	-0.20		-0.47	9.79	-1.62		-0.29	13.28	-0.85		-0.33	17.41	-1.13	
4	-0.05	11.70	-0.20		0.12	16.04	0.39		0.12	18.76	0.46		-0.14	9.65	-0.48		-0.31	12.97	-0.90		0.00	17.41	0.01	
5	-0.44	11.26	-1.70		-0.47	15.57	-1.49		-0.38	18.38	-1.44		-0.33	9.32	-1.15		-0.24	12.72	-0.71		-0.31	17.10	-1.05	
6	-0.35	10.91	-1.36		-0.46	15.11	-1.45		-0.24	18.14	-0.92		0.02	9.34	0.08		0.00	12.72	-0.01		0.20	17.31	0.69	
7	-0.59	10.33	-2.27	*	-0.46	14.65	-1.46		-0.43	17.71	-1.66		-0.31	9.03	-1.09		-0.37	12.35	-1.06		-0.17	17.14	-0.57	
8	0.23	10.56	0.90		0.16	14.81	0.52		0.35	18.06	1.34		-0.51	8.52	-1.75		-0.74	11.62	-2.12	*	-0.33	16.81	-1.12	
9	0.56	11.12	2.18	*	0.52	15.33	1.65		0.67	18.73	2.59	** *	0.09	8.61	0.30		0.24	11.86	0.70		0.20	17.01	0.68	
10	-0.35	10.78	-1.34		-0.62	14.71	-1.97	*	-0.23	18.50	-0.90		-0.35	8.26	-1.19		-0.29	11.57	-0.83		-0.22	16.78	-0.75	

Table 5.3.4a (Cont.)

	Target Size (Big): 80 in total												Target Size (Small): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
11	-0.32	10.46	-1.22		-0.36	14.35	-1.14		-0.22	18.28	-0.83		0.45	8.71	1.55		0.29	11.86	0.82		0.60	17.39	2.04	*
12	0.33	10.79	1.29		0.28	14.64	0.90		0.46	18.74	1.75		0.12	8.83	0.40		0.00	11.86	-0.01		0.20	17.58	0.66	
13	-0.35	10.44	-1.37		-0.30	14.34	-0.94		-0.26	18.48	-0.99		0.53	9.35	1.82		0.39	12.25	1.12		0.62	18.20	2.09	*
14	-0.26	10.18	-1.02		0.18	14.52	0.57		-0.08	18.40	-0.30		0.45	9.80	1.56		0.54	12.78	1.55		0.55	18.75	1.86	
15	-0.37	9.81	-1.44		-0.15	14.37	-0.48		-0.24	18.16	-0.91		0.30	10.10	1.03		0.34	13.13	0.99		0.45	19.20	1.52	
16	-0.24	9.56	-0.94		-0.07	14.31	-0.21		-0.12	18.04	-0.47		-0.15	9.95	-0.53		-0.11	13.01	-0.33		-0.13	19.07	-0.43	
17	0.20	9.76	0.78		0.00	14.31	0.01		0.18	18.22	0.70		0.40	10.35	1.37		0.38	13.40	1.10		0.50	19.57	1.69	
18	0.24	10.00	0.94		0.40	14.72	1.28		0.36	18.58	1.38		-0.52	9.82	-1.81		-0.40	12.99	-1.16		-0.41	19.16	-1.38	
19	0.05	10.05	0.19		0.14	14.85	0.43		0.13	18.71	0.51		0.06	9.89	0.21		-0.04	12.95	-0.12		0.19	19.36	0.65	
20	0.15	10.20	0.58		-0.20	14.65	-0.65		0.14	18.86	0.55		-0.12	9.77	-0.41		-0.13	12.83	-0.36		-0.04	19.32	-0.12	
21	-0.33	9.87	-1.29		-0.35	14.30	-1.12		-0.19	18.67	-0.72		0.05	9.82	0.18		-0.07	12.75	-0.22		0.16	19.48	0.55	
22	-0.56	9.31	-2.16	*	-0.38	13.92	-1.19		-0.45	18.22	-1.72		-0.15	9.67	-0.53		-0.36	12.39	-1.04		0.00	19.49	0.02	
23	-0.45	8.86	-1.74		-0.51	13.42	-1.61		-0.37	17.85	-1.41		0.22	9.89	0.77		0.16	12.55	0.46		0.35	19.84	1.20	
24	-0.06	8.80	-0.25		-0.03	13.38	-0.11		-0.01	17.85	-0.03		0.42	10.31	1.44		0.66	13.20	1.89		0.54	20.38	1.84	
25	-0.14	8.65	-0.56		-0.07	13.31	-0.24		-0.10	17.75	-0.38		0.03	10.34	0.12		0.21	13.41	0.60		0.17	20.56	0.59	
26	-0.40	8.25	-1.55		-0.27	13.04	-0.87		-0.28	17.47	-1.08		-0.38	9.96	-1.31		-0.29	13.13	-0.83		-0.27	20.29	-0.91	
27	-0.38	7.88	-1.46		-0.13	12.90	-0.43		-0.26	17.20	-1.00		0.12	10.08	0.41		0.25	13.38	0.73		0.20	20.49	0.67	
28	-0.22	7.65	-0.86		0.01	12.91	0.02		-0.14	17.06	-0.54		0.53	10.61	1.83		0.49	13.87	1.41		0.57	21.06	1.95	
29	0.25	7.90	0.95		0.44	13.34	1.39		0.32	17.39	1.24		0.28	10.89	0.97		0.46	14.33	1.33		0.35	21.41	1.17	
30	0.10	8.00	0.39		0.33	13.67	1.04		0.31	17.70	1.20		0.15	11.04	0.50		-0.13	14.20	-0.36		0.27	21.68	0.91	
31	-0.27	7.73	-1.04		-0.07	13.61	-0.21		-0.11	17.59	-0.43		-0.34	10.70	-1.17		-0.55	13.66	-1.57		-0.28	21.40	-0.94	
32	-0.12	7.61	-0.47		-0.23	13.38	-0.73		-0.05	17.54	-0.17		-0.30	10.40	-1.03		-0.27	13.39	-0.78		-0.19	21.21	-0.66	
33	-0.37	7.24	-1.44		-0.05	13.32	-0.17		-0.17	17.38	-0.64		-0.37	10.04	-1.26		-0.56	12.83	-1.62		-0.25	20.96	-0.85	
34	-0.27	6.97	-1.03		-0.02	13.30	-0.06		-0.20	17.18	-0.76		0.42	10.46	1.45		0.33	13.16	0.95		0.57	21.52	1.92	
35	-0.12	6.86	-0.45		-0.24	13.06	-0.76		-0.06	17.12	-0.23		0.14	10.60	0.49		0.08	13.24	0.24		0.30	21.82	1.02	

Table 5.3.4a (Cont.)

	Target Size (Big): 80 in total												Target Size (Small): 80 in total										
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
36	-0.38	6.48	-1.45		-0.54	12.53	-1.71		-0.25	16.87	-0.96		0.18	10.78	0.62		-0.13	13.11	-0.36		0.31	22.13	1.04	
37	-0.50	5.99	-1.92		-0.45	12.07	-1.44		-0.43	16.44	-1.65		0.08	10.86	0.29		0.04	13.15	0.11		0.24	22.37	0.81	
38	-0.24	5.75	-0.92		-0.29	11.79	-0.91		-0.14	16.30	-0.53		0.05	10.91	0.19		0.03	13.18	0.08		0.13	22.50	0.45	
39	0.04	5.79	0.16		0.12	11.91	0.38		0.12	16.42	0.46		-0.23	10.69	-0.79		-0.19	12.99	-0.54		-0.17	22.33	-0.57	
40	-0.01	5.78	-0.03		0.14	12.04	0.43		0.11	16.53	0.43		0.72	11.41	2.49	*	0.59	13.57	1.68		0.80	23.13	2.70	** *
41	-0.09	5.69	-0.35		0.20	12.24	0.63		0.05	16.58	0.19		0.10	11.50	0.33		0.10	13.68	0.29		0.19	23.32	0.64	
42	-0.73	4.96	-2.82	** *	-0.35	11.89	-1.10		-0.58	16.00	-2.24	*	-0.28	11.22	-0.97		-0.19	13.48	-0.56		-0.20	23.12	-0.68	
43	0.40	5.36	1.55		0.35	12.25	1.12		0.45	16.45	1.74		0.17	11.39	0.59		0.33	13.81	0.94		0.31	23.43	1.06	
44	-0.20	5.16	-0.78		-0.29	11.96	-0.93		-0.14	16.32	-0.52		0.00	11.40	0.01		0.11	13.92	0.31		0.09	23.52	0.31	
45	-0.59	4.57	-2.27	*	-0.15	11.81	-0.48		-0.47	15.85	-1.79		0.39	11.79	1.35		0.38	14.29	1.08		0.46	23.98	1.56	
46	-0.10	4.48	-0.37		-0.14	11.66	-0.46		-0.03	15.82	-0.10		0.19	11.98	0.66		-0.05	14.24	-0.15		0.26	24.24	0.87	
47	0.47	4.95	1.83		0.27	11.94	0.87		0.58	16.41	2.24	*	-0.60	11.38	-2.08	*	-0.54	13.70	-1.57		-0.52	23.72	-1.75	
48	0.09	5.04	0.36		0.17	12.11	0.54		0.25	16.66	0.96		-0.11	11.27	-0.39		-0.21	13.49	-0.60		0.00	23.72	-0.02	
49	0.02	5.06	0.06		0.01	12.12	0.04		0.11	16.77	0.43		-0.54	10.73	-1.86		-0.53	12.96	-1.53		-0.43	23.29	-1.46	
50	-0.51	4.55	-1.98	*	-0.45	11.67	-1.42		-0.41	16.36	-1.56		-0.30	10.43	-1.05		-0.46	12.50	-1.32		-0.19	23.09	-0.66	
51	0.22	4.77	0.86		0.11	11.78	0.35		0.30	16.66	1.15		0.31	10.74	1.08		0.39	12.89	1.13		0.42	23.51	1.41	
52	0.19	4.96	0.72		0.07	11.85	0.24		0.30	16.96	1.14		-0.32	10.42	-1.10		0.00	12.89	0.00		-0.20	23.31	-0.67	
53	0.07	5.03	0.27		0.19	12.05	0.60		0.15	17.11	0.58		-0.05	10.37	-0.16		-0.10	12.79	-0.28		0.06	23.38	0.21	
54	0.14	5.17	0.54		0.41	12.45	1.30		0.22	17.32	0.83		-0.69	9.68	-2.39	*	-0.50	12.29	-1.45		-0.67	22.71	-2.26	*
55	0.31	5.48	1.20		-0.07	12.39	-0.21		0.39	17.71	1.48		-0.15	9.53	-0.53		-0.37	11.92	-1.07		-0.10	22.61	-0.34	
56	-0.08	5.40	-0.30		-0.14	12.25	-0.44		0.06	17.77	0.24		-0.07	9.46	-0.24		-0.52	11.39	-1.51		0.07	22.68	0.24	
57	-0.60	4.80	-2.31	*	-0.48	11.77	-1.53		-0.44	17.34	-1.67		-0.03	9.43	-0.09		0.08	11.48	0.23		0.15	22.83	0.51	
58	0.00	4.81	0.02		-0.21	11.56	-0.67		0.06	17.40	0.22		-0.10	9.34	-0.34		-0.28	11.20	-0.79		0.00	22.83	0.00	
59	-0.16	4.64	-0.63		-0.29	11.27	-0.92		-0.09	17.31	-0.34		0.16	9.50	0.55		0.15	11.35	0.42		0.30	23.13	1.02	
60	-0.03	4.62	-0.10		0.19	11.46	0.62		0.11	17.42	0.42		-0.12	9.37	-0.43		-0.27	11.08	-0.77		0.00	23.13	0.00	

** Significant at 0.01 level; * Significant at 0.05 level

targets, hence longer adjusting windows. This is consistent with the existence of a positive correlation between firm size and the amount of information available to the market (Barry and Brown 1984).

If less information is available about smaller firms, they should theoretically be riskier than larger ones. If returns are calculated without regard to the effects of information related risk – the forthcoming takeovers, for instance – and smaller firms would be expected to generate more abnormal returns (Barry and Brown 1984). Abnormal returns generated around the M&A announcements in Chinese securities markets, however, do not provide supporting evidence for this argument.

Figure 5.3.4a and b below chart the CAARs for both bigger and smaller targets.

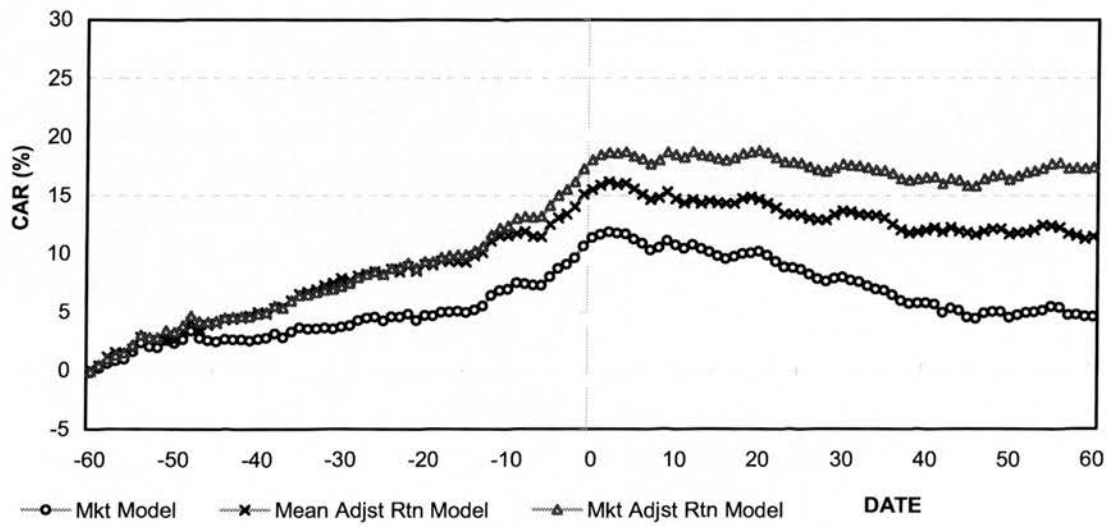

Figure 5.3.4a CAARs for Bigger Targets

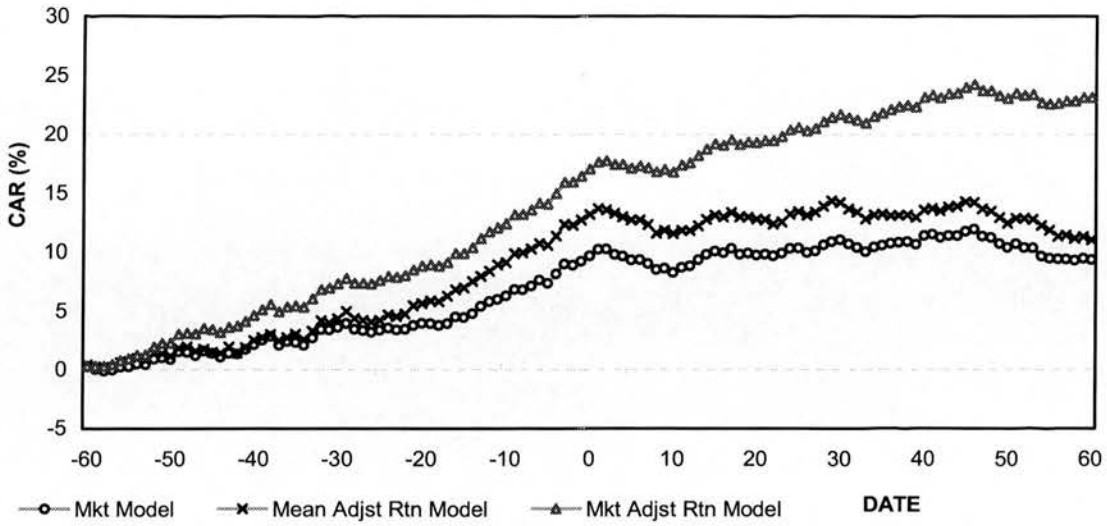

Figure 5.3.4b CAARs for Smaller Targets

Table 5.3.4b below shows that positive abnormal returns were acknowledged for all event windows centred by day 0, with returns from periods of day-20 to day+20, day-10 to day+10, day-5 to day+5 and day-1 to day+1 being significant for bigger targets and results from day-60 to day+60 and day-20 to day+20 only, being significant for smaller targets. Small target group's A share shareholders seem to receive higher abnormal returns for the periods of day-60 to day+60 (9.37%) and day-20 to day+20 (6.00%), compared to the shareholders from big target group (4.62% and 5.90% respectively). However, as later results from the paired t-tests shall reveal, these differences are not significantly different.

Table 5.3.4c below reveals that prior to the event dates, the shareholders of the bigger targets appear to benefit more compared to their counterparts in the smaller targets, which is not consistent with the relevant Western literature. Noticeably, the shareholders of bigger targets experience a significant negative abnormal return during day+1 to day+60 following the event whereas smaller sized targets do not.

Table 5.3.4b CAAR for Firm Size Subgroup

	Target Size (Big): 80 in total									Target Size (Small): 80 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - +60 (121 days)	4.62%	1.62		11.46%	3.31	** *	17.42%	6.07	** *	9.37%	2.95	** *	11.08%	2.90	** *	23.13%	7.13	** *
-20 - +20 (41 days)	5.90%	3.57	** *	6.13%	3.04	** *	10.09%	6.04	** *	6.00%	3.24	** *	7.36%	3.31	** *	10.80%	5.72	** *
-10 - +10 (21 days)	3.93%	3.32	** *	3.18%	2.21	*	6.30%	5.27	** *	2.26%	1.71		2.62%	1.65		4.72%	3.49	** *
-5 - +5 (11 days)	3.95%	4.60	** *	4.09%	3.92	** *	5.15%	5.96	** *	1.66%	1.73		1.95%	1.69		2.93%	3.00	*
-1 - +1 (3 days)	1.99%	4.45	*	1.80%	3.30		2.30%	5.09	*	1.33%	2.66		1.39%	2.31		1.68%	3.29	
-1 - 0 (2 days)	1.71%	4.67		1.40%	3.15		1.88%	5.11		0.80%	1.96		0.90%	1.84		1.09%	2.60	

** Significant at 0.01 level * Significant at 0.05 level

Table 5.3.4c Pre- and Post-Event CAAR for Firm Size Subgroup

	Target Size (Big): 80 in total									Target Size (Small): 80 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - -1 (60 days)	10.68%	5.33	** *	15.11%	6.20	** *	17.28%	8.55	** *	9.21%	4.11	** *	12.74%	4.74	** *	16.43%	7.19	** *
+1 - +60 (60 days)	-6.76%	-3.37	** *	-4.01%	-1.65		-0.65%	-0.32		-0.31%	-0.14		-2.11%	-0.79		6.09%	2.66	** *
-20 - -1 (20 days)	5.81%	5.51	** *	6.18%	4.68	** *	8.07%	7.29	** *	5.77%	4.21	** *	7.99%	4.68	** *	8.41%	5.99	** *
+1 - +20 (20 days)	-1.17%	-1.01		-0.82%	-0.59		0.79%	0.67		0.08%	0.07		-0.37%	-0.24		2.28%	1.73	
-10 - -1 (10 days)	3.83%	4.69	** *	3.58%	3.60	** *	5.08%	6.16	** *	3.20%	3.50	** *	3.79%	3.45	** *	4.36%	4.67	** *
+1 - +10 (10 days)	-0.60%	-0.73		-0.76%	-0.77		0.43%	0.52		-1.42%	-1.55		-1.62%	-1.47		-0.26%	-0.28	
-5 - -1 (5 days)	3.36%	5.81	** *	3.63%	5.16	** *	4.05%	6.94	** *	1.54%	2.39		1.96%	2.53		2.25%	3.42	*
+1 - +5 (5 days)	-0.11%	-0.19		0.09%	0.13		0.31%	0.54		-0.36%	-0.56		-0.47%	-0.61		0.06%	0.09	

** Significant at 0.01 level * Significant at 0.05 level

This indicates that the market may be overly optimistic in viewing the forthcoming restructurings for larger targets and over-reacted prior to the event day.

To test the null hypothesis specified in section 5.2.4 that the mean abnormal return for "Bigger" target firms equals the mean abnormal return for "Smaller" target firms,

Table 5.3.4d T-Test for Firm Size Subgroup

	Size-Big	*Size-Small*	*Size-Big*	*Size-Small*	*Size-Big*	*Size-Small*
	(Day-60 - Day+60)		(Day-60 - Day-1)		(Day+1 - Day+60)	
Mean	0.0382	0.0775	0.1779	0.1534	-0.1126	-0.0052
Variance	0.1269	0.1107	0.1185	0.1059	0.0893	0.1037
Observations	121		60		60	
Pearson Correlation	0.1719		0.1587		-0.0443	
Hypothesized Mean Difference	0		0		0	
df	120		59		59	
t Stat	-0.9744		0.4367		-1.8531	
P(T<=t) one-tail	0.1659		0.3320		0.0344	
t Critical one-tail	1.6577		1.6711		1.6711	
P(T<=t) two-tail	0.3318		0.6639		0.0689	
t Critical two-tail	1.9799		2.0010		2.0010	
	(Day-20 - Day+20)		(Day-20 - Day-1)		(Day+1 - Day+20)	
Mean	0.1439	0.1464	0.3187	0.2721	-0.0585	0.0042
Variance	0.1480	0.1282	0.1177	0.1014	0.1026	0.1247
Observations	41		20		20	
Pearson Correlation	0.2820		0.1445		0.0261	
Hypothesized Mean Difference	0		0		0	
df	40		19		19	
t Stat	-0.0359		0.4813		-0.5956	
P(T<=t) one-tail	0.4858		0.3179		0.2792	
t Critical one-tail	1.6839		1.7291		1.7291	
P(T<=t) two-tail	0.9715		0.6358		0.5585	
t Critical two-tail	2.0211		2.0930		2.0930	
	(Day-10 - Day+10)		(Day-10 - Day-1)		(Day+1 - Day+10)	
Mean	0.1871	0.1077	0.3831	0.3204	-0.0598	-0.1420
Variance	0.1942	0.1684	0.1528	0.1377	0.1395	0.1017
Observations	21		10		10	
Pearson Correlation	0.4786		0.0006		0.4743	
Hypothesized Mean Difference	0		0		0	
df	20		9		9	
t Stat	0.8364		0.3680		0.7264	
P(T<=t) one-tail	0.2064		0.3607		0.2430	
t Critical one-tail	1.7247		1.8331		1.8331	
P(T<=t) two-tail	0.4128		0.7214		0.4860	
t Critical two-tail	2.0860		2.2622		2.2622	
	(Day-5 - Day+5)		(Day-5 - Day-1)		(Day+1 - Day+5)	
Mean	0.3587	0.1508	0.6717	0.3090	-0.0218	-0.0727
Variance	0.1892	0.2095	0.0586	0.2513	0.0826	0.1520
Observations	11		5		5	
Pearson Correlation	0.5151		-0.2388		0.7998	
Hypothesized Mean Difference	0		0		0	
df	10		4		4	
t Stat	1.5671		1.3372		0.4838	
P(T<=t) one-tail	0.0741		0.1261		0.3269	
t Critical one-tail	1.8125		2.1318		2.1318	
P(T<=t) two-tail	0.1482		0.2521		0.6538	
t Critical two-tail	2.2281		2.7764		2.7764	
	(Day-1 - Day+1)				(Day-1 - Day0)	
Mean	0.6633	0.4440			0.8526	0.4003
Variance	0.1320	0.0117			0.0489	0.0119
Observations	3				2	
Pearson Correlation	-0.9396				-1	
Hypothesized Mean Difference	0				0	
df	2				1	
t Stat	0.8145				1.9370	
P(T<=t) one-tail	0.2505				0.1517	
t Critical one-tail	2.9200				6.3138	
P(T<=t) two-tail	0.5009				0.3034	
t Critical two-tail	4.3027				12.7062	

Table 5.3.4d was constructed as above. None of the t-values are significant, hence, the degree of average abnormal returns for the two groups is not statistically different. Further analysis is needed in order to understand why the size effect does not exist in the Chinese context, when using the sub-groups concerned in this study.

Western researchers in general explain the size effect in three ways.

1. Information and risk. As discussed earlier, larger firms would be associated with more available information to the market. Smaller firms with less information about them would be riskier. Rational investors would therefore demand a premium to offset such risks (Klein and Bawa 1977). Additionally, in a mature market, the announcement of a takeover bid for a smaller target will contain relatively more information than an announcement for a larger target, and because smaller firms reacted more severely than large firms when faced with "surprise" such as the announcements (Brauer 1986), more abnormal returns are expected for smaller targets.
2. Size and liquidity. Because size and liquidity are positively related, larger targets will trade more frequently. Therefore, the premium offered by a bidder for a larger target need not be as generous compared to that offered to smaller targets' shareholders (Bradley 1986).
3. Outcome effect. Jensen and Ruback (1983) have asserted that different returns might be associated with particular outcomes of the takeover process, such as whether smaller targets are more likely to be subject to successful or subsequent bids and whether the offers of larger targets are more likely to be withdrawn, etc.

The above theories however, might not be able to be applied directly in the Chinese context given the unique characteristics of Chinese corporate restructuring activities and the immature nature of the Chinese stock markets. 1) As was shown by Table 5.3.4a, although more information seems to be available for larger targets in China, it does not necessarily mean that larger firms are associated with fewer risks. In addition, smaller targets did not appear to react "severely" when faced with "surprise" on day 0 (no significant abnormal return is identified on day 0 for smaller sized group). 2) With a high percentage of non-tradable shares in a listed firm's share structure, it should not be assumed that size and liquidity are positively associated in China. 3) The sub-groups were not divided further according to the outcomes. This could have affected the results.

More realistically, that the size effect does not seem to be apparent in China could be due to methodological issues and the data sample itself. 1) If the true beta of smaller firms is greater than estimated, then the required rates of return for smaller firms will be underestimated, and this may lead to overestimated abnormal returns; If the true beta for larger firms is smaller than estimated then the required rates of return for large firms will be overestimated, the abnormal returns may be underestimated. 2) As noted in section 5.1.4, researchers from the West conventionally use *relative* size, i.e. target size compared to acquirer size. The use of an *absolute* size here, the book value of the assets of a listed firm obtained from its annual report – may not be accurate. 3) Dividing the sample into sub-groups according to the median may not be too appropriate either, and last but not least, 4) the accounting data published by the firms could be less accurate than for western companies.

In conclusion, the null hypothesis of equality of the mean abnormal returns for the two groups cannot be rejected. The target size effect on shareholders' gain around the M&A announcements is not present when analysed using the sub-groups divided according to their book values of the total assets.

5.3.5 A Share Proportion

Table 5.3.5a below presents the AARs for Higher and Lower A% targets when divided by the percentage of A shares in the share structure prior to the announcement.

As the table reveals, significant AARs for lower A% group are recognised earlier (on day-54) and more frequently (on day-52, -49, -40, -36, -20, -13, -12, etc.) compared to higher A% group (at day-48, -47, -24, -12, -11, etc.). This appears to provide support to the argument in section 5.1.5 that a larger group of retail shareholders may be less promptly informed of a certain corporate event compared to a smaller group of retail investors, hence, the former may respond more slowly. Nonetheless, the difference in the early adjustments should not be taken too literally because of the possible noise effect included in the longer event window.

More interesting results are seen in the days immediately prior to and after the event day. For the lower A% group, significant positive abnormal returns occur immediately before the event date (day-6, -4 and -3) and on the event date (day 0), soon followed by a series significant negative abnormal returns (day+3, +7, +8 and +10). As shall be later revealed, over-reaction prior to the event may have caused this. Whereas for the

Table 5.3.5a AAR and CAAR (Day-60 to Day+60) for A Share Proportion Subgroup

	A% (High): 80 in total												A% (Low): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-60	0.32	0.32	1.08		0.67	0.67	1.86		0.43	0.43	1.43		-0.21	-0.21	-0.80		-0.16	-0.16	-0.48		-0.12	-0.12	-0.47	
-59	0.28	0.60	0.96		0.62	1.29	1.71		0.49	0.92	1.63		-0.15	-0.35	-0.56		-0.43	-0.60	-1.28		-0.03	-0.15	-0.11	
-58	0.26	0.87	0.89		0.30	1.58	0.82		0.36	1.28	1.19		0.02	-0.33	0.09		0.30	-0.30	0.87		0.20	0.05	0.76	
-57	0.10	0.96	0.34		0.21	1.80	0.59		0.17	1.45	0.56		0.20	-0.13	0.78		0.28	-0.02	0.83		0.30	0.35	1.15	
-56	0.26	1.23	0.89		0.12	1.92	0.33		0.40	1.85	1.32		0.10	-0.03	0.40		0.25	0.23	0.74		0.14	0.49	0.54	
-55	0.25	1.48	0.84		0.09	2.01	0.26		0.33	2.18	1.09		0.42	0.39	1.62		0.36	0.60	1.06		0.49	0.98	1.87	
-54	0.30	1.77	1.01		0.17	2.18	0.47		0.36	2.54	1.19		0.72	1.11	2.78	** *	1.09	1.68	3.21	** *	0.78	1.76	2.98	** *
-53	-0.34	1.43	-1.16		-0.30	1.88	-0.83		-0.16	2.38	-0.55		-0.04	1.07	-0.14		-0.13	1.56	-0.37		0.00	1.76	0.00	
-52	-0.15	1.28	-0.51		-0.26	1.62	-0.71		0.00	2.38	0.01		0.54	1.61	2.07	*	0.70	2.25	2.05	*	0.67	2.43	2.55	*
-51	0.28	1.56	0.94		-0.18	1.45	-0.49		0.36	2.74	1.21		0.47	2.08	1.81		0.23	2.49	0.69		0.59	3.02	2.25	*
-50	-0.28	1.28	-0.93		-0.49	0.96	-1.34		-0.14	2.60	-0.47		-0.12	1.96	-0.46		0.28	2.77	0.83		0.00	3.02	0.01	
-49	0.48	1.76	1.61		0.78	1.74	2.15	*	0.57	3.18	1.90		0.51	2.47	1.97	*	0.69	3.46	2.03	*	0.73	3.75	2.78	** *
-48	0.58	2.34	1.97	*	0.80	2.53	2.20	*	0.78	3.95	2.58	** *	0.10	2.57	0.37		0.16	3.62	0.48		0.19	3.93	0.71	
-47	-0.64	1.70	-2.16	*	-0.62	1.92	-1.71		-0.49	3.46	-1.63		-0.24	2.32	-0.94		-0.40	3.23	-1.17		-0.07	3.86	-0.26	
-46	-0.07	1.63	-0.25		0.01	1.93	0.04		0.05	3.52	0.18		0.25	2.57	0.96		0.55	3.78	1.63		0.36	4.22	1.36	
-45	0.04	1.66	0.12		0.23	2.16	0.64		0.15	3.66	0.49		-0.32	2.25	-1.23		-0.40	3.38	-1.18		-0.21	4.01	-0.80	
-44	-0.16	1.50	-0.55		-0.29	1.87	-0.81		-0.03	3.64	-0.09		0.02	2.27	0.07		0.51	3.89	1.51		0.09	4.10	0.36	
-43	0.07	1.57	0.23		-0.19	1.68	-0.54		0.16	3.79	0.52		0.20	2.47	0.78		0.80	4.69	2.35	*	0.31	4.42	1.19	
-42	0.17	1.74	0.57		-0.16	1.52	-0.43		0.27	4.07	0.90		-0.24	2.24	-0.91		-0.27	4.42	-0.80		-0.12	4.29	-0.48	
-41	0.11	1.85	0.38		0.46	1.98	1.27		0.18	4.25	0.60		0.19	2.43	0.74		0.19	4.61	0.56		0.21	4.50	0.82	
-40	0.04	1.89	0.12		0.10	2.08	0.27		0.11	4.36	0.38		0.55	2.98	2.12	*	0.79	5.40	2.31	*	0.64	5.15	2.45	*
-39	-0.01	1.87	-0.05		-0.11	1.96	-0.31		0.11	4.47	0.36		0.46	3.44	1.79		0.24	5.64	0.72		0.50	5.65	1.91	
-38	0.31	2.18	1.04		0.24	2.20	0.66		0.49	4.96	1.64		0.36	3.81	1.41		0.54	6.18	1.59		0.51	6.15	1.93	
-37	-0.81	1.37	-2.72	** *	-0.54	1.66	-1.49		-0.69	4.27	-2.30	*	-0.25	3.55	-0.98		0.09	6.27	0.27		-0.12	6.03	-0.46	
-36	0.25	1.63	0.86		0.25	1.92	0.70		0.42	4.69	1.39		0.54	4.09	2.08	*	0.53	6.80	1.56		0.60	6.63	2.30	*

Table 5.3.5a (Cont.)

	A% (High): 80 in total												A% (Low): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-35	0.21	1.84	0.73		0.44	2.36	1.22		0.33	5.02	1.11		0.08	4.17	0.31		0.40	7.20	1.18		0.23	6.86	0.87	
-34	-0.24	1.61	-0.80		-0.52	1.84	-1.44		-0.07	4.96	-0.22		-0.11	4.06	-0.44		0.26	7.46	0.78		0.02	6.88	0.08	
-33	0.55	2.16	1.86		0.84	2.68	2.34	*	0.67	5.63	2.22	*	0.10	4.16	0.39		0.09	7.55	0.26		0.21	7.09	0.80	
-32	0.53	2.68	1.78		0.70	3.39	1.95		0.65	6.28	2.17	*	0.24	4.40	0.93		0.54	8.10	1.60		0.37	7.47	1.42	
-31	-0.15	2.53	-0.51		-0.05	3.34	-0.14		-0.03	6.25	-0.11		0.06	4.46	0.23		0.07	8.17	0.22		0.19	7.65	0.72	
-30	0.49	3.02	1.66		0.50	3.83	1.37		0.60	6.85	1.99	*	-0.11	4.35	-0.44		0.23	8.40	0.68		0.03	7.68	0.11	
-29	0.17	3.19	0.58		-0.18	3.65	-0.49		0.33	7.18	1.10		0.28	4.63	1.09		0.63	9.04	1.86		0.39	8.07	1.49	
-28	0.21	3.40	0.71		-0.05	3.61	-0.13		0.27	7.45	0.90		-0.28	4.35	-1.08		-0.16	8.88	-0.46		-0.19	7.89	-0.71	
-27	-0.13	3.27	-0.45		-0.23	3.37	-0.65		-0.10	7.35	-0.33		0.25	4.60	0.98		0.24	9.12	0.72		0.39	8.27	1.48	
-26	0.10	3.37	0.35		-0.11	3.26	-0.30		0.22	7.57	0.71		-0.16	4.44	-0.61		0.19	9.31	0.55		-0.07	8.20	-0.27	
-25	-0.20	3.17	-0.69		-0.20	3.07	-0.55		-0.08	7.49	-0.26		0.03	4.48	0.13		0.05	9.36	0.16		0.21	8.41	0.78	
-24	0.76	3.93	2.58	** *	1.09	4.16	3.02	** *	0.90	8.39	2.99	** *	-0.21	4.27	-0.80		-0.14	9.22	-0.41		-0.11	8.30	-0.44	
-23	0.06	3.99	0.20		-0.02	4.14	-0.05		0.19	8.58	0.63		-0.25	4.02	-0.98		-0.34	8.88	-1.00		-0.14	8.16	-0.53	
-22	0.08	4.07	0.27		0.35	4.49	0.98		0.19	8.78	0.65		0.21	4.23	0.82		0.30	9.18	0.88		0.30	8.45	1.13	
-21	-0.34	3.73	-1.16		-0.07	4.42	-0.21		-0.20	8.58	-0.65		0.11	4.34	0.44		0.39	9.57	1.14		0.26	8.71	0.99	
-20	0.10	3.83	0.33		0.17	4.59	0.47		0.24	8.82	0.80		0.53	4.87	2.05	*	0.59	10.16	1.74		0.64	9.35	2.43	*
-19	-0.16	3.67	-0.53		0.17	4.75	0.46		-0.02	8.80	-0.08		0.11	4.98	0.41		0.00	10.16	-0.01		0.10	9.45	0.38	
-18	0.52	4.19	1.75		0.64	5.39	1.76		0.65	9.44	2.14	*	-0.39	4.58	-1.52		-0.34	9.82	-1.00		-0.34	9.11	-1.31	
-17	-0.03	4.16	-0.09		-0.18	5.21	-0.50		0.11	9.56	0.37		0.23	4.81	0.88		0.61	10.43	1.81		0.32	9.43	1.24	
-16	0.13	4.29	0.44		0.09	5.30	0.25		0.24	9.80	0.80		0.51	5.33	1.98	*	0.39	10.83	1.15		0.58	10.01	2.23	*
-15	-0.15	4.14	-0.49		-0.02	5.28	-0.06		-0.06	9.74	-0.19		-0.03	5.30	-0.10		0.17	10.99	0.49		0.07	10.08	0.28	
-14	0.34	4.49	1.16		0.36	5.64	1.00		0.49	10.23	1.61		0.22	5.52	0.85		0.75	11.74	2.19	*	0.32	10.41	1.23	
-13	0.36	4.84	1.21		-0.01	5.63	-0.03		0.47	10.70	1.58		0.58	6.10	2.24	*	0.71	12.45	2.08	*	0.70	11.11	2.68	** *
-12	0.70	5.55	2.38	*	0.81	6.43	2.23	*	0.87	11.57	2.89	** *	0.62	6.72	2.39	*	0.65	13.09	1.91		0.73	11.84	2.77	** *
-11	0.72	6.27	2.45	*	0.80	7.23	2.20	*	0.82	12.39	2.71	** *	-0.14	6.58	-0.54		0.16	13.26	0.48		0.04	11.88	0.16	

Table 5.3.5a (Cont.)

	A% (High): 80 in total												A% (Low): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-10	0.40	6.68	1.37		0.21	7.44	0.59		0.50	12.89	1.67		0.02	6.59	0.06		0.01	13.27	0.03		0.04	11.92	0.15	
-9	0.85	7.52	2.87	** *	0.70	8.14	1.93		0.95	13.84	3.15	** *	0.28	6.88	1.09		0.26	13.52	0.75		0.48	12.40	1.84	
-8	0.28	7.81	0.96		0.37	8.51	1.03		0.41	14.26	1.37		-0.40	6.48	-1.53		-0.13	13.39	-0.37		-0.20	12.20	-0.78	
-7	0.11	7.91	0.36		-0.08	8.43	-0.22		0.19	14.45	0.63		0.10	6.58	0.40		-0.02	13.38	-0.06		0.11	12.31	0.43	
-6	-0.13	7.78	-0.44		-0.19	8.25	-0.51		-0.08	14.36	-0.28		0.62	7.20	2.38	*	0.64	14.01	1.87		0.73	13.04	2.80	** *
-5	0.41	8.19	1.38		0.24	8.48	0.66		0.56	14.92	1.86		0.07	7.27	0.26		0.68	14.69	2.01	*	0.32	13.36	1.22	
-4	0.75	8.94	2.55	*	0.89	9.38	2.47	*	0.91	15.83	3.02	** *	0.74	8.00	2.84	** *	0.43	15.13	1.27		0.85	14.21	3.24	** *
-3	0.44	9.38	1.49		0.52	9.89	1.43		0.61	16.44	2.01	*	0.75	8.76	2.91	** *	0.81	15.93	2.38	*	0.81	15.03	3.11	** *
-2	0.24	9.63	0.82		0.28	10.17	0.77		0.37	16.81	1.22		0.17	8.92	0.65		0.26	16.19	0.76		0.31	15.33	1.18	
-1	0.85	10.48	2.89	** *	0.86	11.04	2.39	*	0.90	17.71	3.00	** *	0.48	9.40	1.85		0.62	16.81	1.82		0.66	16.00	2.53	*
0	0.44	10.92	1.48		0.16	11.20	0.44		0.60	18.31	1.99	*	0.74	10.14	2.85	** *	0.66	17.47	1.94		0.81	16.80	3.08	** *
1	0.36	11.28	1.22		0.46	11.66	1.28		0.43	18.75	1.44		0.45	10.60	1.76		0.42	17.89	1.24		0.58	17.38	2.20	*
2	-0.16	11.12	-0.52		-0.05	11.61	-0.14		-0.06	18.69	-0.20		0.41	11.01	1.59		0.25	18.15	0.74		0.37	17.75	1.43	
3	0.17	11.29	0.57		0.13	11.74	0.37		0.29	18.97	0.95		-0.75	10.26	-2.90	** *	-0.69	17.45	-2.04	*	-0.67	17.08	-2.57	*
4	0.07	11.36	0.23		-0.07	11.67	-0.19		0.26	19.23	0.86		-0.26	10.00	-1.01		-0.12	17.33	-0.36		-0.14	16.94	-0.52	
5	-0.44	10.92	-1.48		-0.23	11.45	-0.63		-0.39	18.84	-1.29		-0.33	9.66	-1.29		-0.49	16.84	-1.44		-0.30	16.64	-1.13	
6	-0.46	10.46	-1.56		-0.53	10.91	-1.47		-0.32	18.53	-1.05		0.13	9.79	0.51		0.07	16.92	0.21		0.28	16.92	1.06	
7	-0.50	9.96	-1.70		-0.45	10.46	-1.25		-0.37	18.16	-1.21		-0.40	9.39	-1.55		-0.37	16.54	-1.10		-0.24	16.69	-0.90	
8	0.42	10.38	1.41		0.33	10.79	0.91		0.53	18.69	1.75		-0.69	8.70	-2.66	** *	-0.90	15.64	-2.65	** *	-0.51	16.18	-1.95	
9	0.13	10.50	0.43		0.20	10.99	0.55		0.30	18.99	0.99		0.52	9.23	2.02	*	0.56	16.20	1.65		0.58	16.75	2.20	*
10	-0.17	10.33	-0.58		-0.17	10.83	-0.46		-0.01	18.97	-0.05		-0.52	8.71	-2.01	*	-0.74	15.46	-2.19	*	-0.44	16.31	-1.69	

Table 5.3.5a (Cont.)

	A% (High): 80 in total												A% (Low): 80 in total										
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
11	0.22	10.55	0.74		-0.04	10.78	-0.12		0.35	19.33	1.17		-0.09	8.62	-0.33		-0.03	15.43	-0.08		0.03	16.34	0.11	
12	0.13	10.68	0.43		0.01	10.79	0.02		0.23	19.56	0.78		0.32	8.94	1.25		0.28	15.71	0.81		0.42	16.76	1.60	
13	0.27	10.95	0.92		0.27	11.06	0.76		0.35	19.91	1.17		-0.10	8.84	-0.39		-0.18	15.53	-0.54		0.01	16.77	0.02	
14	0.32	11.27	1.08		0.29	11.36	0.81		0.45	20.37	1.51		-0.13	8.71	-0.50		0.42	15.95	1.25		0.02	16.78	0.06	
15	-0.06	11.21	-0.20		-0.05	11.31	-0.13		0.11	20.47	0.35		-0.01	8.70	-0.05		0.24	16.19	0.71		0.11	16.89	0.40	
16	-0.24	10.96	-0.82		-0.50	10.81	-1.38		-0.16	20.32	-0.52		-0.15	8.55	-0.60		0.32	16.51	0.94		-0.10	16.79	-0.36	
17	0.52	11.48	1.75		0.52	11.33	1.45		0.55	20.87	1.83		0.08	8.63	0.31		-0.14	16.38	-0.40		0.13	16.92	0.49	
18	0.33	11.81	1.12		0.43	11.76	1.18		0.39	21.26	1.30		-0.61	8.02	-2.36	*	-0.43	15.95	-1.25		-0.44	16.49	-1.67	
19	0.12	11.93	0.40		0.06	11.82	0.16		0.29	21.55	0.98		-0.01	8.01	-0.03		0.04	15.99	0.11		0.03	16.52	0.12	
20	-0.30	11.63	-1.03		-0.19	11.63	-0.51		-0.26	21.30	-0.85		0.34	8.34	1.30		-0.14	15.84	-0.42		0.36	16.88	1.39	
21	-0.11	11.51	-0.39		-0.03	11.60	-0.08		-0.01	21.29	-0.02		-0.17	8.18	-0.65		-0.40	15.45	-1.16		-0.02	16.86	-0.07	
22	-0.44	11.07	-1.51		-0.51	11.09	-1.41		-0.29	21.00	-0.96		-0.27	7.91	-1.03		-0.23	15.22	-0.67		-0.16	16.71	-0.59	
23	-0.11	10.96	-0.37		-0.08	11.02	-0.21		0.03	21.03	0.11		-0.12	7.80	-0.45		-0.27	14.95	-0.79		-0.05	16.66	-0.18	
24	0.37	11.32	1.24		0.59	11.60	1.62		0.48	21.52	1.61		-0.01	7.78	-0.05		0.04	14.99	0.10		0.05	16.71	0.18	
25	-0.27	11.05	-0.92		-0.12	11.48	-0.34		-0.17	21.35	-0.57		0.16	7.95	0.63		0.26	15.24	0.76		0.25	16.96	0.94	
26	-0.12	10.93	-0.40		-0.14	11.34	-0.39		-0.03	21.32	-0.11		-0.66	7.28	-2.57	*	-0.42	14.82	-1.24		-0.52	16.44	-1.98	*
27	-0.40	10.54	-1.34		-0.23	11.11	-0.63		-0.29	21.02	-0.97		0.14	7.42	0.54		0.34	15.17	1.01		0.23	16.67	0.88	
28	0.03	10.56	0.09		0.02	11.13	0.05		0.05	21.08	0.18		0.28	7.70	1.08		0.48	15.64	1.40		0.38	17.05	1.45	
29	0.44	11.00	1.48		0.44	11.57	1.21		0.48	21.56	1.59		0.09	7.79	0.35		0.46	16.10	1.35		0.19	17.24	0.73	
30	0.15	11.15	0.49		0.19	11.76	0.54		0.27	21.82	0.89		0.10	7.89	0.38		0.01	16.11	0.02		0.31	17.55	1.19	
31	-0.19	10.96	-0.63		-0.44	11.32	-1.23		-0.09	21.74	-0.29		-0.42	7.47	-1.62		-0.17	15.94	-0.50		-0.30	17.25	-1.15	
32	-0.20	10.76	-0.67		-0.15	11.17	-0.41		-0.12	21.61	-0.41		-0.22	7.25	-0.85		-0.35	15.59	-1.04		-0.12	17.13	-0.44	
33	-0.34	10.42	-1.16		-0.44	10.74	-1.21		-0.23	21.38	-0.76		-0.40	6.85	-1.53		-0.18	15.41	-0.53		-0.19	16.95	-0.71	
34	0.27	10.69	0.91		0.39	11.13	1.08		0.36	21.74	1.18		-0.11	6.74	-0.44		-0.08	15.33	-0.24		0.01	16.96	0.05	
35	0.00	10.69	0.01		0.02	11.15	0.05		0.13	21.87	0.44		0.02	6.76	0.09		-0.17	15.15	-0.51		0.11	17.07	0.41	

Table 5.3.5a (Cont.)

	A% (High): 80 in total												A% (Low): 80 in total										
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
36	0.00	10.69	0.00		-0.30	10.85	-0.83		0.12	21.99	0.40		-0.19	6.57	-0.75		-0.36	14.79	-1.07		-0.06	17.01	-0.24	
37	0.01	10.70	0.04		0.01	10.86	0.04		0.09	22.09	0.30		-0.42	6.15	-1.63		-0.43	14.36	-1.26		-0.28	16.72	-1.08	
38	0.15	10.86	0.52		0.05	10.91	0.15		0.26	22.35	0.87		-0.34	5.81	-1.31		-0.31	14.05	-0.91		-0.27	16.46	-1.02	
39	-0.18	10.68	-0.59		-0.20	10.71	-0.56		-0.07	22.28	-0.22		-0.01	5.79	-0.05		0.13	14.18	0.39		0.02	16.47	0.07	
40	0.41	11.09	1.40		0.54	11.26	1.50		0.53	22.82	1.77		0.30	6.09	1.15		0.18	14.36	0.52		0.38	16.85	1.43	
41	-0.31	10.79	-1.04		-0.21	11.04	-0.59		-0.17	22.64	-0.58		0.31	6.40	1.21		0.51	14.88	1.51		0.41	17.26	1.58	
42	-0.37	10.42	-1.25		-0.20	10.84	-0.56		-0.25	22.39	-0.84		-0.64	5.76	-2.48	*	-0.34	14.54	-0.99		-0.53	16.73	-2.03	*
43	0.26	10.67	0.87		0.14	10.98	0.38		0.39	22.78	1.30		0.32	6.08	1.22		0.54	15.08	1.59		0.37	17.10	1.42	
44	0.06	10.74	0.22		0.04	11.02	0.12		0.12	22.90	0.39		-0.26	5.82	-1.01		-0.23	14.85	-0.67		-0.16	16.94	-0.61	
45	-0.55	10.19	-1.86		-0.40	10.62	-1.11		-0.47	22.42	-1.57		0.36	6.17	1.37		0.63	15.48	1.84		0.46	17.41	1.77	
46	-0.06	10.13	-0.20		-0.07	10.55	-0.19		0.05	22.47	0.15		0.15	6.33	0.59		-0.13	15.35	-0.37		0.19	17.59	0.71	
47	-0.46	9.67	-1.54		-0.50	10.05	-1.39		-0.36	22.11	-1.19		0.33	6.66	1.26		0.23	15.58	0.68		0.43	18.02	1.64	
48	0.03	9.71	0.11		0.04	10.09	0.11		0.16	22.27	0.54		-0.05	6.60	-0.20		-0.08	15.50	-0.23		0.08	18.11	0.32	
49	-0.08	9.63	-0.28		-0.10	9.99	-0.27		-0.01	22.26	-0.04		-0.44	6.16	-1.70		-0.42	15.08	-1.24		-0.31	17.80	-1.18	
50	-0.35	9.27	-1.19		-0.28	9.71	-0.77		-0.22	22.04	-0.74		-0.46	5.70	-1.79		-0.63	14.45	-1.85		-0.38	17.42	-1.45	
51	0.75	10.02	2.52	*	0.85	10.56	2.34	*	0.87	22.90	2.87	** *	-0.21	5.49	-0.82		-0.34	14.11	-1.01		-0.15	17.27	-0.57	
52	0.08	10.10	0.28		0.00	10.56	-0.01		0.14	23.05	0.48		-0.21	5.27	-0.83		0.08	14.19	0.23		-0.04	17.22	-0.17	
53	0.12	10.22	0.41		0.33	10.89	0.92		0.24	23.29	0.81		-0.10	5.18	-0.38		-0.24	13.95	-0.70		-0.03	17.20	-0.11	
54	-0.20	10.02	-0.69		0.19	11.07	0.52		-0.15	23.14	-0.51		-0.35	4.83	-1.34		-0.28	13.67	-0.83		-0.30	16.90	-1.13	
55	-0.28	9.74	-0.96		-0.72	10.36	-1.98	*	-0.22	22.92	-0.73		0.44	5.27	1.70		0.28	13.95	0.83		0.51	17.41	1.93	
56	-0.20	9.53	-0.69		-0.53	9.83	-1.47		-0.07	22.84	-0.25		0.06	5.33	0.22		-0.13	13.81	-0.39		0.21	17.61	0.79	
57	-0.17	9.36	-0.59		0.06	9.89	0.16		0.00	22.85	0.02		-0.45	4.88	-1.74		-0.46	13.36	-1.34		-0.29	17.32	-1.11	
58	0.09	9.45	0.30		0.01	9.89	0.03		0.19	23.04	0.64		-0.18	4.70	-0.70		-0.49	12.86	-1.46		-0.13	17.19	-0.51	
59	0.19	9.63	0.63		0.22	10.11	0.61		0.33	23.37	1.09		-0.19	4.51	-0.73		-0.36	12.50	-1.07		-0.12	17.07	-0.45	
60	0.15	9.78	0.51		-0.03	10.09	-0.07		0.30	23.67	1.00		-0.30	4.21	-1.16		-0.05	12.45	-0.13		-0.19	16.88	-0.74	

** Significant at 0.01 level; * Significant at 0.05 level

higher A% group, AARs are identified on day-9, -4 and -1, with no AAR after the event day 0. This indicates that the share prices for higher A% group have been fully adjusted prior to the event.

Figure 5.3.5a and b below provide graphic presentations of the CAARs for the two sub-groups, respectively.

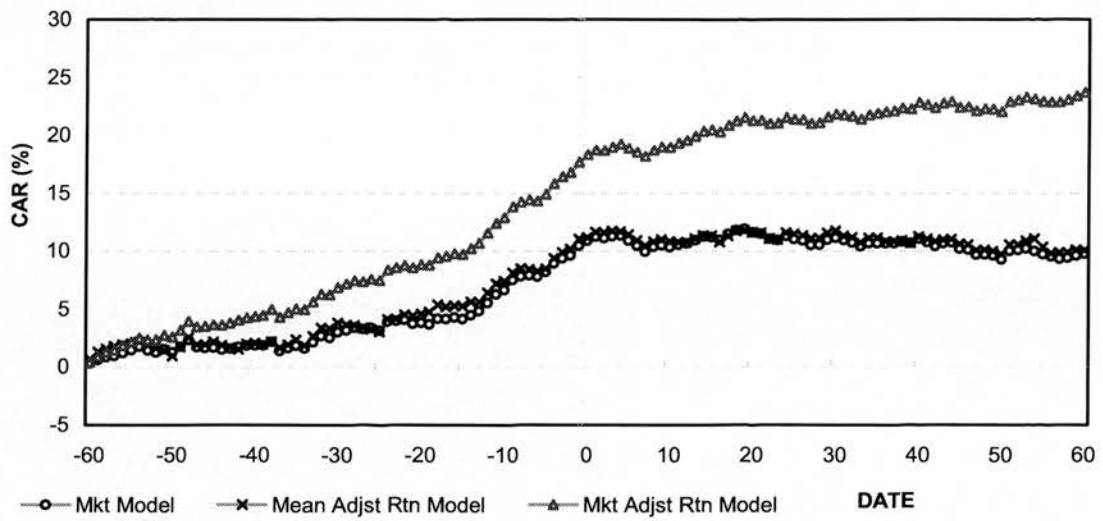

Figure 5.3.5a CAARs for Higher A% Group

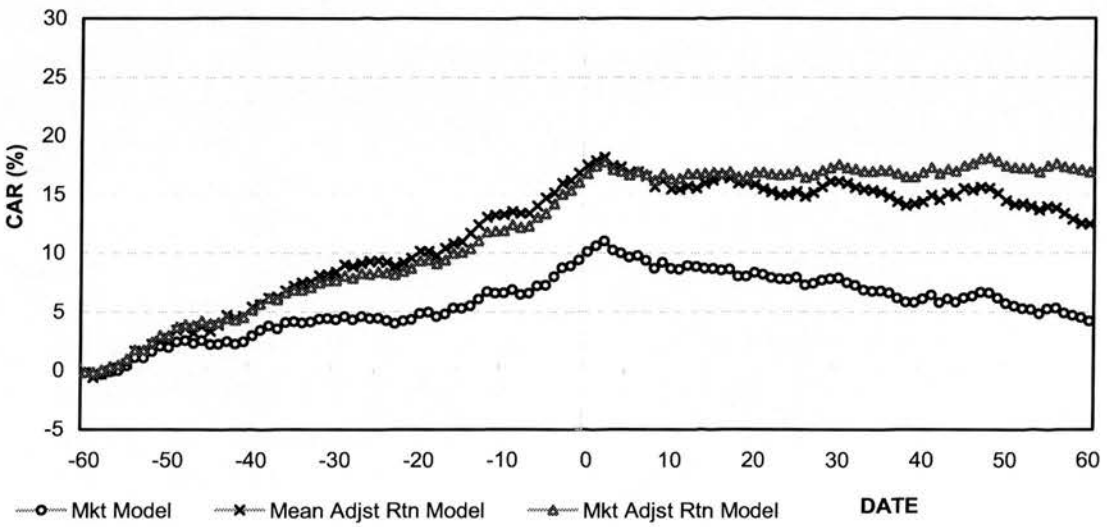

Figure 5.3.5b CAARs for Lower A% Group

Table 5.3.5b below shows that positive CAARs are identified for the higher A% group in four event windows (day-60 to day+60, day-20 to day+20, day-10 to day+10 and day-5 to day+5), whereas positive CAARs are only observed for the lower A%

Table 5.3.5b CAAR for A Share Proportion Subgroup

	A% (High): 80 in total									A% (Low): 80 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - +60 (121 days)	9.78%	3.01	** *	10.09%	2.54	*	23.67%	7.14	** *	4.21%	1.48		12.45%	3.33	** *	16.88%	5.86	** *
-20 - +20 (41 days)	7.90%	4.17	** *	7.21%	3.12	** *	12.72%	6.59	** *	4.01%	2.42	*	6.27%	2.88	** *	8.17%	4.87	** *
-10 - +10 (21 days)	4.06%	3.00	** *	3.60%	2.17	*	6.58%	4.77	** *	2.13%	1.80		2.21%	1.42		4.43%	3.69	** *
-5 - +5 (11 days)	3.14%	3.21	** *	3.20%	2.67	*	4.48%	4.48	** *	2.46%	2.87	*	2.83%	2.51	*	3.60%	4.15	** *
-1 - +1 (3 days)	1.65%	3.23		1.49%	2.37		1.94%	3.71		1.67%	3.73		1.70%	2.89		2.04%	4.50	*
-1 - 0 (2 days)	1.29%	3.09		1.02%	2.01		1.50%	3.52		1.22%	3.32		1.28%	2.66		1.47%	3.96	

** Significant at 0.01 level * Significant at 0.05 level

Table 5.3.5c Pre- and Post-Event CAAR for A Share Proportion Subgroup

	A% (High): 80 in total									A% (Low): 80 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - -1 (60 days)	10.48%	4.58	** *	11.04%	3.94	** *	17.71%	7.59	** *	9.40%	4.69	** *	16.81%	6.39	** *	16.00%	7.88	** *
+1 - +60 (60 days)	-1.13%	-0.49		-1.11%	-0.40		5.36%	2.29	*	-5.94%	-2.96	** *	-5.02%	-1.91		0.08%	0.04	
-20 - -1 (20 days)	6.41%	5.11	** *	6.54%	4.10	** *	8.94%	6.77	** *	5.18%	4.38	** *	7.63%	4.76	** *	7.54%	6.22	** *
+1 - +20 (20 days)	0.71%	0.54		0.44%	0.27		2.99%	2.21	*	-1.80%	-1.55		-1.63%	-1.07		0.08%	0.07	
-10 - -1 (10 days)	4.21%	4.50	** *	3.81%	3.33	** *	5.32%	5.59	** *	2.83%	3.45	** *	3.56%	3.31	** *	4.12%	4.97	** *
+1 - +10 (10 days)	-0.58%	-0.63		-0.37%	-0.32		0.66%	0.69		-1.43%	-1.75		-2.01%	-1.87		-0.49%	-0.59	
-5 - -1 (5 days)	2.70%	4.08	** *	2.79%	3.45	*	3.35%	4.97	** *	2.20%	3.81	*	2.80%	3.69	*	2.95%	5.04	** *
+1 - +5 (5 days)	0.01%	0.01		0.25%	0.31		0.53%	0.79		-0.48%	-0.83		-0.63%	-0.83		-0.16%	-0.27	

** Significant at 0.01 level * Significant at 0.05 level

group in two windows (day-20 to day+20 and day-5 to day+5). The difference is even clearer if using the 1% significance level: no significant abnormal returns are acknowledged for event windows centred on the event date for the lower A% group.

Table 5.3.5c above further revealed that the significant positive CAARs gained by the lower A% group before the event date, for example, 9.40% for day-60 to day-1, were offset by a significant abnormal return of -5.94% in the post-event window day+1 – day+60. This offset does not appear in the higher A% group.

Although value is created prior to the announcement for both groups, the market appears to have over-reacted to the event for lower-A% group prior to the event date. This result could be due to insider control. One might expect that this control is easier to exert if the A share percentage is relatively lower in a listed firm.

Further more, as discussed in section 5.1.5, the variable of A share percentage implies the degree of privatisation, where the higher A% would mean a higher degree of privatisation. If the degree of privatisation is positively associated with a firm's (previous SOE) performance, then one should expect that shareholders from the higher A% group receive more abnormal returns around the announcement date. Table 5.3.5c shows that higher A% group receive higher CAARs for all pre-event windows, that might give support to the above argument.

Table 5.3.5d is constructed to test if average abnormal returns are statistically different between the two groups. The table showed no significant t-value and the null hypothesis of equality of average abnormal returns is therefore not rejected.

Table 5.3.5d T-Test for A Share Proportion Subgroup

	A%(High)	A%(Low)	A%(High)	A%(Low)	A%(High)	A%(Low)
	(Day-60 - Day+60)		(Day-60 - Day-1)		(Day+1 - Day+60)	
Mean	0.0809	0.0348	0.1747	0.1567	-0.0189	-0.0989
Variance	0.1089	0.1169	0.1171	0.0941	0.0832	0.1020
Observations	121		60		60	
Pearson Correlation	0.2330		0.2321		-0.0035	
Hypothesized Mean Difference	0		0		0	
df	120		59		59	
t Stat	1.2184		0.3446		1.4384	
P(T<=t) one-tail	0.1127		0.3658		0.0778	
t Critical one-tail	1.6577		1.6711		1.6711	
P(T<=t) two-tail	0.2254		0.7316		0.1556	
t Critical two-tail	1.9799		2.0010		2.0010	
	(Day-20 - Day+20)		(Day-20 - Day-1)		(Day+1 - Day+20)	
Mean	0.1926	0.0977	0.3375	0.2532	0.0355	-0.0898
Variance	0.1206	0.1667	0.1070	0.1193	0.0958	0.1477
Observations	41		20		20	
Pearson Correlation	0.2343		0.1079		-0.0433	
Hypothesized Mean Difference	0		0		0	
df	40		19		19	
t Stat	1.2937		0.8395		1.1126	
P(T<=t) one-tail	0.1016		0.2058		0.1399	
t Critical one-tail	1.6839		1.7291		1.7291	
P(T<=t) two-tail	0.2032		0.4116		0.2798	
t Critical two-tail	2.0211		2.0930		2.0930	
	(Day-10 - Day+10)		(Day-10 - Day-1)		(Day+1 - Day+10)	
Mean	0.1933	0.1014	0.4209	0.2826	-0.0585	-0.1433
Variance	0.1586	0.2320	0.1040	0.1336	0.1140	0.2340
Observations	21		10		10	
Pearson Correlation	0.3779		0.2256		0.0188	
Hypothesized Mean Difference	0		0		0	
df	20		9		9	
t Stat	0.8498		1.0181		0.4587	
P(T<=t) one-tail	0.2027		0.1676		0.3287	
t Critical one-tail	1.7247		1.8331		1.8331	
P(T<=t) two-tail	0.4055		0.3352		0.6573	
t Critical two-tail	2.0860		2.2622		2.2622	
	(Day-5 - Day+5)		(Day-5 - Day-1)		(Day+1 - Day+5)	
Mean	0.2856	0.2239	0.5396	0.4410	0.0015	-0.0959
Variance	0.1387	0.2481	0.0649	0.0999	0.0946	0.2676
Observations	11		5		5	
Pearson Correlation	0.5848		0.5407		0.1621	
Hypothesized Mean Difference	0		0		0	
df	10		4		4	
t Stat	0.4973		0.7913		0.3906	
P(T<=t) one-tail	0.3149		0.2365		0.3580	
t Critical one-tail	1.8125		2.1318		2.1318	
P(T<=t) two-tail	0.6297		0.4731		0.7160	
t Critical two-tail	2.2281		2.7764		2.7764	
	(Day-1 - Day+1)				(Day-1 - Day0)	
Mean	0.5504	0.5570			0.6449	0.6081
Variance	0.0702	0.0245			0.0868	0.0333
Observations	3				2	
Pearson Correlation	-0.2988				-1	
Hypothesized Mean Difference	0				0	
df	2				1	
t Stat	-0.0331				0.1090	
P(T<=t) one-tail	0.4883				0.4654	
t Critical one-tail	2.9200				6.3138	
P(T<=t) two-tail	0.9766				0.9309	
t Critical two-tail	4.3027				12.7062	

The private ownership (A-share percentage), does not appear to have a significant impact on firm performance and its restructuring activities in China. Why the variable lacks of explanatory power needs to be further analysed. Sun et al (2002) used pooled regression on data from 1994 to 1997 and concluded that partial government

ownership has a positive impact on SOE performance. In a later paper, the authors took the issue further (Sun et al. (2003)) and found that state-ownership (state shares percentage) had negative impacts on firm performance and legal-person ownership (legal-person shares percentage) had positive impacts on firm performance after share issuing privatisation. Therefore, a variable that measures the government ownership (state share percentage and legal-person share percentage) may be of more explanatory power than private ownership than the variable that was explored here. Nonetheless, the results presented in this section indicate that A share shareholders, as minority shareholders, have very insignificant influence over a company's performance.

In summary, it is found that the degree of abnormal returns around the announcements of M&As for the target firms is the same regardless the A share percentage in the targets' share structure.

5.3.6 Voting Power

This variable is of particular interest since the A share percentage proved to lack explanatory power.

Table 5.3.6a reveals only a few AARs for the high voting power group, and they tend to occur immediately prior to and around the event day (day-51, -40, -13, -5, -4, -1, day 0 and +1). For the low voting power group, significant AARs are identified over a longer window (day-53, -50, -49, -47, -38, -37, -36, -16, -12, -9, -4 and -3) prior to the event day.

Table 5.3.6a AAR and CAAR (Day-60 to Day+60) for Voting Power Subgroup

	V-Power (High): 80 in total												V-Power (Low): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-60	-0.18	-0.18	-0.58		0.11	0.11	0.30		-0.12	-0.12	-0.40		0.29	0.29	1.06		0.40	0.40	1.22		0.43	0.43	1.57	
-59	-0.15	-0.33	-0.50		-0.20	-0.09	-0.55		0.00	-0.13	-0.01		0.29	0.57	1.06		0.39	0.79	1.18		0.47	0.90	1.71	
-58	-0.02	-0.35	-0.08		0.25	0.15	0.68		0.08	-0.05	0.26		0.31	0.89	1.15		0.34	1.13	1.05		0.48	1.38	1.75	
-57	0.03	-0.32	0.11		0.22	0.37	0.59		0.10	0.05	0.33		0.27	1.15	0.99		0.28	1.41	0.85		0.37	1.75	1.35	
-56	0.47	0.15	1.55		0.49	0.86	1.34		0.53	0.58	1.73		-0.10	1.05	-0.37		-0.12	1.29	-0.38		0.01	1.76	0.05	
-55	0.49	0.64	1.63		0.29	1.16	0.80		0.52	1.10	1.72		0.18	1.23	0.65		0.16	1.45	0.49		0.29	2.05	1.08	
-54	0.29	0.93	0.97		0.67	1.83	1.82		0.32	1.43	1.05		0.72	1.95	2.67	** *	0.59	2.04	1.81		0.82	2.87	2.99	** *
-53	-0.15	0.79	-0.48		-0.03	1.80	-0.07		-0.04	1.39	-0.13		-0.23	1.72	-0.87		-0.40	1.64	-1.22		-0.12	2.75	-0.45	
-52	0.56	1.34	1.84		0.32	2.12	0.87		0.68	2.06	2.21	*	-0.17	1.55	-0.63		0.12	1.76	0.36		-0.01	2.75	-0.02	
-51	0.91	2.26	3.03	** *	0.54	2.66	1.48		1.04	3.10	3.41	** *	-0.17	1.38	-0.62		-0.48	1.28	-1.47		-0.09	2.66	-0.32	
-50	0.18	2.44	0.60		0.45	3.11	1.23		0.25	3.36	0.83		-0.57	0.80	-2.12	*	-0.65	0.62	-1.99	*	-0.39	2.27	-1.43	
-49	0.43	2.86	1.42		0.63	3.75	1.73		0.61	3.97	2.01	*	0.56	1.36	2.06	*	0.83	1.45	2.54	*	0.69	2.95	2.51	*
-48	0.21	3.08	0.71		0.15	3.90	0.42		0.31	4.28	1.00		0.46	1.83	1.72		0.81	2.26	2.45	*	0.66	3.61	2.40	*
-47	-0.33	2.74	-1.11		-0.38	3.52	-1.04		-0.17	4.11	-0.56		-0.55	1.28	-2.02	*	-0.64	1.62	-1.94		-0.39	3.22	-1.42	
-46	0.06	2.80	0.18		0.22	3.74	0.59		0.16	4.27	0.54		0.12	1.40	0.44		0.35	1.97	1.07		0.25	3.47	0.90	
-45	-0.25	2.55	-0.82		-0.54	3.20	-1.47		-0.15	4.12	-0.50		-0.04	1.37	-0.13		0.37	2.34	1.13		0.09	3.56	0.33	
-44	0.05	2.61	0.18		0.18	3.38	0.49		0.06	4.18	0.20		-0.20	1.17	-0.73		0.04	2.39	0.13		0.01	3.56	0.02	
-43	0.40	3.01	1.33		0.65	4.02	1.76		0.46	4.64	1.50		-0.13	1.04	-0.49		-0.04	2.35	-0.12		0.01	3.57	0.03	
-42	-0.24	2.77	-0.79		-0.29	3.73	-0.79		-0.16	4.47	-0.54		0.17	1.21	0.63		-0.14	2.21	-0.42		0.31	3.88	1.14	
-41	-0.01	2.76	-0.02		0.14	3.87	0.37		-0.02	4.45	-0.06		0.31	1.52	1.16		0.51	2.72	1.56		0.41	4.30	1.51	
-40	0.74	3.50	2.45	*	0.76	4.63	2.08	*	0.78	5.24	2.56	*	-0.15	1.37	-0.56		0.12	2.84	0.37		-0.03	4.27	-0.10	
-39	-0.04	3.46	-0.13		-0.16	4.48	-0.43		0.04	5.28	0.14		0.49	1.86	1.81		0.29	3.13	0.88		0.57	4.84	2.07	*
-38	0.04	3.50	0.12		0.06	4.53	0.15		0.20	5.48	0.67		0.64	2.49	2.35	*	0.72	3.85	2.20	*	0.79	5.63	2.90	** *
-37	-0.41	3.08	-1.37		0.04	4.58	0.12		-0.31	5.17	-1.02		-0.65	1.85	-2.39	*	-0.49	3.36	-1.50		-0.50	5.13	-1.84	
-36	0.16	3.25	0.54		0.20	4.78	0.54		0.24	5.41	0.79		0.63	2.48	2.33	*	0.58	3.94	1.77		0.78	5.91	2.86	** *

Table 5.3.6a (Cont.)

	V-Power (High): 80 in total												V-Power (Low): 80 in total										
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-35	0.34	3.59	1.14		0.35	5.13	0.97		0.45	5.86	1.47		-0.05	2.43	-0.18		0.49	4.43	1.48		0.11	6.03	0.41	
-34	-0.37	3.22	-1.23		-0.34	4.80	-0.91		-0.21	5.65	-0.69		0.02	2.45	0.08		0.08	4.51	0.24		0.17	6.19	0.61	
-33	0.44	3.66	1.45		0.53	5.32	1.44		0.53	6.18	1.72		0.21	2.66	0.79		0.40	4.91	1.23		0.35	6.54	1.29	
-32	0.40	4.05	1.31		0.53	5.85	1.44		0.56	6.74	1.84		0.37	3.03	1.38		0.72	5.63	2.20	*	0.46	7.01	1.69	
-31	-0.14	3.91	-0.45		0.11	5.96	0.29		0.02	6.76	0.06		0.04	3.08	0.17		-0.08	5.55	-0.25		0.14	7.14	0.50	
-30	0.36	4.28	1.20		0.39	6.35	1.07		0.42	7.18	1.37		0.01	3.09	0.05		0.33	5.88	1.02		0.21	7.35	0.76	
-29	0.35	4.63	1.17		0.26	6.62	0.72		0.47	7.64	1.53		0.10	3.19	0.36		0.19	6.07	0.59		0.26	7.61	0.94	
-28	-0.06	4.57	-0.20		-0.34	6.27	-0.94		-0.05	7.59	-0.16		-0.01	3.18	-0.03		0.14	6.21	0.42		0.13	7.75	0.49	
-27	0.09	4.66	0.31		0.04	6.31	0.10		0.20	7.80	0.66		0.03	3.21	0.09		-0.03	6.19	-0.08		0.09	7.83	0.31	
-26	0.06	4.72	0.20		0.04	6.35	0.11		0.13	7.93	0.44		-0.11	3.09	-0.42		0.04	6.22	0.12		0.01	7.84	0.04	
-25	0.02	4.74	0.06		0.00	6.34	-0.01		0.16	8.09	0.51		-0.19	2.91	-0.69		-0.14	6.09	-0.42		-0.03	7.81	-0.11	
-24	0.36	5.10	1.20		0.56	6.90	1.51		0.44	8.53	1.44		0.19	3.10	0.70		0.39	6.48	1.20		0.35	8.16	1.26	
-23	0.26	5.36	0.86		0.09	6.99	0.24		0.38	8.91	1.26		-0.45	2.64	-1.68		-0.45	6.03	-1.37		-0.33	7.83	-1.22	
-22	0.29	5.65	0.96		0.17	7.16	0.48		0.34	9.25	1.11		0.00	2.65	0.01		0.48	6.51	1.46		0.15	7.98	0.55	
-21	-0.18	5.47	-0.58		0.24	7.40	0.66		-0.01	9.25	-0.02		-0.05	2.59	-0.20		0.07	6.58	0.22		0.07	8.05	0.25	
-20	0.52	6.00	1.74		0.54	7.94	1.47		0.62	9.87	2.04	*	0.11	2.70	0.39		0.22	6.81	0.68		0.26	8.30	0.95	
-19	-0.31	5.68	-1.04		0.04	7.99	0.12		-0.28	9.59	-0.91		0.26	2.96	0.98		0.12	6.92	0.36		0.35	8.66	1.29	
-18	-0.13	5.56	-0.42		-0.37	7.62	-1.01		-0.11	9.48	-0.37		0.25	3.22	0.93		0.67	7.59	2.03	*	0.41	9.07	1.51	
-17	-0.19	5.37	-0.63		0.22	7.84	0.61		-0.07	9.41	-0.23		0.39	3.61	1.44		0.21	7.80	0.64		0.51	9.58	1.85	
-16	0.06	5.43	0.20		0.30	8.14	0.81		0.11	9.52	0.36		0.58	4.19	2.16	*	0.19	7.99	0.57		0.71	10.29	2.61	** *
-15	0.21	5.63	0.68		0.38	8.52	1.03		0.28	9.80	0.91		-0.38	3.81	-1.40		-0.24	7.75	-0.72		-0.26	10.03	-0.97	
-14	0.55	6.19	1.84		0.75	9.27	2.04	*	0.61	10.41	2.00	*	0.01	3.82	0.03		0.36	8.11	1.08		0.20	10.23	0.72	
-13	0.83	7.02	2.77	** *	0.82	10.09	2.23	*	0.97	11.37	3.16	** *	0.10	3.92	0.37		-0.12	7.98	-0.37		0.21	10.44	0.78	
-12	0.56	7.58	1.85		0.54	10.63	1.48		0.72	12.09	2.34	*	0.76	4.69	2.82	** *	0.91	8.89	2.77	** *	0.88	11.32	3.23	** *
-11	0.36	7.94	1.19		0.63	11.26	1.72		0.51	12.60	1.68		0.23	4.91	0.83		0.33	9.22	1.00		0.35	11.67	1.26	

Table 5.3.6a (Cont.)

	V-Power (High): 80 in total												V-Power (Low): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-10	0.08	8.01	0.25		-0.16	11.11	-0.42		0.13	12.73	0.42		0.34	5.26	1.27		0.38	9.60	1.15		0.41	12.08	1.51	
-9	0.57	8.59	1.91		0.47	11.58	1.28		0.76	13.49	2.49	*	0.56	5.81	2.06	*	0.48	10.08	1.47		0.67	12.75	2.45	*
-8	0.02	8.61	0.06		0.37	11.95	1.01		0.15	13.64	0.49		-0.13	5.68	-0.49		-0.12	9.96	-0.38		0.06	12.81	0.22	
-7	0.14	8.75	0.46		0.05	12.00	0.14		0.20	13.84	0.65		0.07	5.75	0.25		-0.15	9.81	-0.45		0.10	12.92	0.38	
-6	0.54	9.29	1.81		0.35	12.35	0.95		0.57	14.40	1.86		-0.06	5.69	-0.21		0.10	9.91	0.31		0.08	13.00	0.30	
-5	0.62	9.91	2.06	*	0.84	13.19	2.30	*	0.81	15.21	2.64	** *	-0.15	5.54	-0.54		0.08	9.99	0.24		0.08	13.08	0.28	
-4	0.68	10.59	2.25	*	0.77	13.96	2.09	*	0.79	16.00	2.59	** *	0.81	6.36	3.00	** *	0.55	10.55	1.69		0.97	14.04	3.53	** *
-3	0.43	11.02	1.42		0.41	14.36	1.11		0.52	16.52	1.70		0.77	7.12	2.83	** *	0.92	11.47	2.80	** *	0.90	14.94	3.29	** *
-2	0.16	11.18	0.54		0.21	14.57	0.57		0.24	16.77	0.79		0.25	7.37	0.92		0.33	11.79	0.99		0.44	15.38	1.59	
-1	0.89	12.07	2.96	** *	0.97	15.55	2.66	** *	0.96	17.73	3.15	** *	0.44	7.81	1.63		0.51	12.30	1.55		0.60	15.98	2.20	*
0	0.82	12.89	2.71	** *	0.40	15.95	1.09		0.90	18.63	2.94	** *	0.36	8.17	1.31		0.42	12.72	1.28		0.51	16.49	1.85	
1	0.81	13.70	2.70	** *	0.72	16.67	1.97	*	0.92	19.54	3.00	** *	0.00	8.17	0.01		0.16	12.88	0.49		0.09	16.58	0.34	
2	0.14	13.84	0.46		0.25	16.92	0.68		0.13	19.68	0.44		0.12	8.29	0.43		-0.05	12.83	-0.14		0.18	16.76	0.66	
3	-0.42	13.42	-1.38		-0.35	16.56	-0.97		-0.33	19.35	-1.07		-0.16	8.13	-0.61		-0.20	12.63	-0.62		-0.06	16.70	-0.22	
4	0.12	13.55	0.41		-0.06	16.51	-0.16		0.26	19.61	0.84		-0.32	7.81	-1.17		-0.13	12.50	-0.40		-0.13	16.57	-0.49	
5	-0.47	13.07	-1.57		-0.50	16.01	-1.35		-0.42	19.18	-1.39		-0.30	7.51	-1.09		-0.22	12.28	-0.67		-0.26	16.31	-0.95	
6	-0.29	12.78	-0.97		-0.46	15.55	-1.25		-0.16	19.02	-0.52		-0.04	7.47	-0.14		0.00	12.28	0.00		0.12	16.43	0.44	
7	-0.34	12.44	-1.12		-0.27	15.28	-0.74		-0.21	18.81	-0.68		-0.56	6.91	-2.09	*	-0.55	11.73	-1.68		-0.39	16.03	-1.44	
8	-0.48	11.96	-1.61		-0.79	14.49	-2.15	*	-0.33	18.48	-1.09		0.21	7.12	0.78		0.22	11.95	0.66		0.35	16.38	1.28	
9	0.11	12.07	0.36		0.01	14.50	0.02		0.22	18.71	0.73		0.54	7.66	2.00	*	0.75	12.70	2.30	*	0.65	17.03	2.38	*
10	-0.31	11.76	-1.02		-0.45	14.05	-1.22		-0.16	18.55	-0.51		-0.38	7.28	-1.42		-0.46	12.24	-1.40		-0.30	16.73	-1.10	

Table 5.3.6a (Cont.)

	V-Power (High): 80 in total									V-Power (Low): 80 in total								
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
11	0.10	11.86	0.34		-0.08	13.97	-0.21		0.19	18.74	0.61		0.03	7.31	0.11		0.00	12.24	0.01		0.20	16.93	0.72	
12	0.16	12.02	0.52		0.04	14.01	0.11		0.24	18.98	0.80		0.29	7.60	1.08		0.24	12.49	0.74		0.41	17.34	1.50	
13	0.30	12.32	1.00		0.06	14.07	0.17		0.36	19.34	1.18		-0.13	7.47	-0.48		0.03	12.51	0.09		0.00	17.34	0.00	
14	0.01	12.33	0.04		0.43	14.51	1.18		0.09	19.43	0.30		0.17	7.65	0.64		0.28	12.80	0.87		0.38	17.72	1.38	
15	-0.09	12.24	-0.31		-0.02	14.49	-0.05		0.02	19.45	0.06		0.02	7.67	0.08		0.21	13.01	0.64		0.19	17.91	0.71	
16	-0.01	12.23	-0.02		0.04	14.53	0.11		0.04	19.49	0.13		-0.39	7.28	-1.44		-0.22	12.79	-0.66		-0.29	17.62	-1.06	
17	0.35	12.58	1.16		0.12	14.65	0.33		0.43	19.92	1.41		0.25	7.52	0.91		0.26	13.06	0.81		0.25	17.87	0.91	
18	-0.18	12.41	-0.59		-0.01	14.64	-0.04		-0.14	19.79	-0.45		-0.10	7.42	-0.37		0.02	13.08	0.05		0.09	17.96	0.32	
19	0.29	12.70	0.97		0.56	15.19	1.52		0.32	20.11	1.05		-0.18	7.24	-0.67		-0.46	12.61	-1.41		0.00	17.96	0.01	
20	0.02	12.72	0.07		-0.21	14.98	-0.57		0.08	20.19	0.27		0.01	7.25	0.05		-0.12	12.49	-0.36		0.03	17.99	0.10	
21	-0.03	12.69	-0.10		-0.34	14.64	-0.93		0.08	20.27	0.26		-0.25	7.00	-0.92		-0.08	12.41	-0.25		-0.10	17.89	-0.38	
22	-0.25	12.44	-0.83		-0.20	14.44	-0.54		-0.16	20.11	-0.51		-0.46	6.54	-1.70		-0.54	11.87	-1.64		-0.29	17.60	-1.06	
23	0.17	12.61	0.56		-0.07	14.37	-0.19		0.26	20.37	0.85		-0.40	6.15	-1.47		-0.28	11.60	-0.84		-0.28	17.32	-1.01	
24	0.19	12.79	0.62		0.44	14.81	1.21		0.26	20.64	0.87		0.17	6.31	0.61		0.18	11.77	0.54		0.27	17.59	0.98	
25	-0.02	12.78	-0.06		0.11	14.92	0.30		0.07	20.71	0.22		-0.09	6.22	-0.34		0.02	11.80	0.07		0.01	17.60	0.03	
26	-0.26	12.51	-0.87		-0.52	14.40	-1.42		-0.19	20.52	-0.62		-0.52	5.70	-1.91		-0.04	11.76	-0.12		-0.36	17.24	-1.33	
27	-0.17	12.34	-0.56		0.19	14.59	0.52		-0.11	20.40	-0.37		-0.09	5.61	-0.32		-0.07	11.69	-0.22		0.05	17.29	0.18	
28	0.18	12.52	0.59		0.27	14.86	0.73		0.23	20.63	0.75		0.13	5.74	0.48		0.23	11.91	0.69		0.21	17.49	0.75	
29	0.06	12.58	0.20		0.30	15.16	0.82		0.15	20.78	0.49		0.46	6.21	1.72		0.60	12.51	1.82		0.52	18.01	1.90	
30	0.35	12.93	1.15		0.25	15.41	0.67		0.45	21.24	1.49		-0.10	6.11	-0.37		-0.04	12.47	-0.13		0.13	18.14	0.46	
31	-0.45	12.47	-1.51		-0.58	14.83	-1.58		-0.38	20.85	-1.26		-0.15	5.96	-0.55		-0.03	12.44	-0.10		0.00	18.13	-0.02	
32	0.08	12.56	0.27		0.07	14.90	0.20		0.20	21.05	0.65		-0.50	5.45	-1.86		-0.57	11.86	-1.74		-0.44	17.69	-1.60	
33	-0.51	12.05	-1.68		-0.40	14.50	-1.08		-0.37	20.68	-1.22		-0.23	5.22	-0.86		-0.22	11.64	-0.67		-0.04	17.65	-0.16	
34	-0.01	12.04	-0.03		0.05	14.55	0.13		0.06	20.74	0.19		0.16	5.39	0.60		0.26	11.90	0.80		0.31	17.96	1.14	
35	-0.15	11.90	-0.48		-0.24	14.31	-0.66		-0.04	20.70	-0.12		0.17	5.56	0.63		0.09	11.99	0.26		0.28	18.24	1.02	

Table 5.3.6a (Cont.)

	V-Power (High): 80 in total												V-Power (Low): 80 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
36	-0.19	11.71	-0.62		-0.41	13.90	-1.13		-0.08	20.62	-0.27		-0.01	5.55	-0.03		-0.25	11.74	-0.76		0.14	18.38	0.51	
37	0.07	11.77	0.22		-0.01	13.89	-0.03		0.17	20.79	0.55		-0.48	5.07	-1.76		-0.41	11.33	-1.24		-0.36	18.02	-1.31	
38	-0.35	11.42	-1.17		-0.31	13.58	-0.85		-0.31	20.48	-1.00		0.17	5.24	0.62		0.05	11.39	0.16		0.30	18.32	1.10	
39	0.09	11.51	0.28		0.07	13.65	0.19		0.12	20.61	0.40		-0.27	4.97	-1.01		-0.14	11.25	-0.42		-0.17	18.15	-0.62	
40	0.39	11.90	1.31		0.40	14.05	1.10		0.49	21.09	1.60		0.32	5.29	1.17		0.32	11.57	0.97		0.42	18.57	1.54	
41	0.00	11.90	0.00		0.02	14.07	0.06		0.06	21.15	0.18		0.01	5.29	0.03		0.28	11.84	0.85		0.18	18.75	0.67	
42	-0.20	11.70	-0.65		-0.20	13.87	-0.54		-0.14	21.01	-0.45		-0.81	4.48	-3.01	** *	-0.34	11.50	-1.04		-0.65	18.11	-2.37	*
43	0.23	11.94	0.78		0.31	14.19	0.85		0.28	21.29	0.91		0.34	4.82	1.25		0.37	11.87	1.12		0.49	18.59	1.78	
44	0.06	12.00	0.20		0.18	14.37	0.50		0.22	21.52	0.73		-0.26	4.56	-0.95		-0.37	11.50	-1.12		-0.27	18.33	-0.97	
45	-0.24	11.75	-0.81		-0.14	14.23	-0.39		-0.19	21.32	-0.64		0.05	4.61	0.18		0.37	11.87	1.12		0.19	18.51	0.68	
46	0.08	11.83	0.26		-0.06	14.17	-0.16		0.19	21.51	0.61		0.02	4.62	0.06		-0.14	11.74	-0.41		0.05	18.56	0.17	
47	0.46	12.30	1.54		0.11	14.27	0.29		0.59	22.10	1.93		-0.59	4.03	-2.19	*	-0.38	11.36	-1.15		-0.52	18.04	-1.91	
48	0.07	12.37	0.24		-0.08	14.19	-0.22		0.24	22.34	0.78		-0.09	3.94	-0.34		0.04	11.40	0.13		0.01	18.04	0.02	
49	-0.44	11.93	-1.45		-0.55	13.64	-1.49		-0.35	21.99	-1.13		-0.08	3.86	-0.30		0.03	11.43	0.08		0.03	18.07	0.09	
50	-0.29	11.64	-0.97		-0.62	13.03	-1.68		-0.19	21.80	-0.63		-0.52	3.33	-1.94		-0.29	11.14	-0.89		-0.41	17.66	-1.49	
51	0.39	12.03	1.29		0.42	13.45	1.14		0.48	22.28	1.58		0.14	3.48	0.53		0.08	11.22	0.25		0.23	17.89	0.85	
52	-0.22	11.81	-0.73		-0.07	13.38	-0.18		-0.12	22.16	-0.38		0.09	3.57	0.33		0.14	11.36	0.43		0.22	18.11	0.80	
53	-0.09	11.72	-0.30		-0.08	13.30	-0.23		-0.03	22.14	-0.09		0.11	3.68	0.42		0.17	11.54	0.53		0.24	18.35	0.88	
54	-0.16	11.56	-0.52		-0.15	13.15	-0.41		-0.08	22.06	-0.26		-0.39	3.29	-1.45		0.06	11.60	0.18		-0.37	17.98	-1.35	
55	0.18	11.74	0.60		-0.15	13.00	-0.40		0.24	22.30	0.80		-0.02	3.26	-0.09		-0.29	11.31	-0.88		0.04	18.02	0.15	
56	0.02	11.76	0.05		-0.06	12.94	-0.16		0.12	22.42	0.40		-0.16	3.10	-0.60		-0.61	10.70	-1.85		0.01	18.03	0.04	
57	-0.28	11.48	-0.93		-0.35	12.59	-0.97		-0.20	22.22	-0.66		-0.34	2.76	-1.26		-0.04	10.66	-0.14		-0.09	17.95	-0.31	
58	0.07	11.55	0.23		-0.17	12.41	-0.47		0.17	22.39	0.55		-0.16	2.60	-0.60		-0.31	10.34	-0.96		-0.11	17.84	-0.40	
59	-0.03	11.51	-0.11		-0.24	12.18	-0.65		0.03	22.42	0.10		0.03	2.63	0.11		0.10	10.44	0.29		0.18	18.02	0.66	
60	0.18	11.69	0.58		0.23	12.40	0.62		0.30	22.72	0.97		-0.33	2.30	-1.20		-0.30	10.14	-0.90		-0.19	17.83	-0.68	

** Significant at 0.01 level; * Significant at 0.05 level

Figure 5.3.6a and 5.3.6b below chart the CAARs for the two groups.

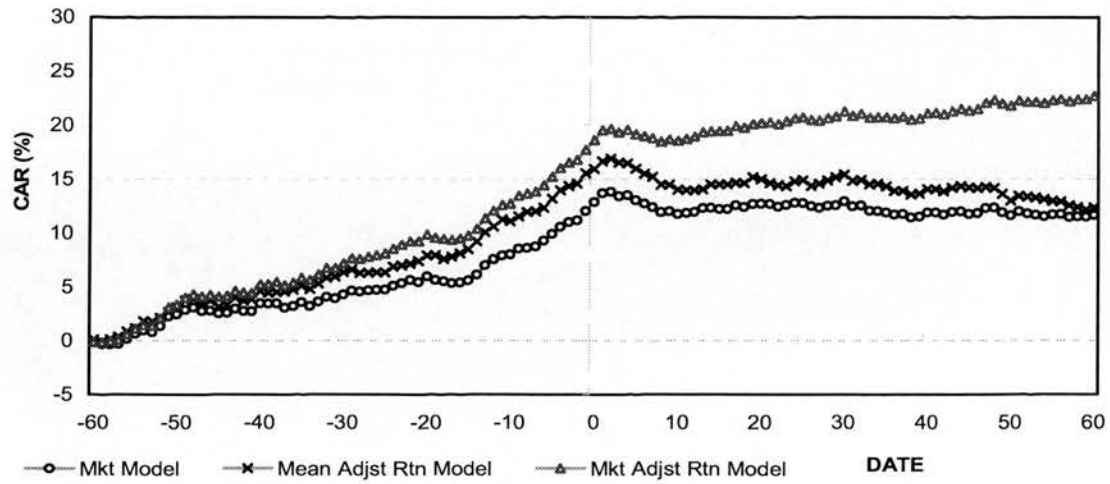

Figure 5.3.6a CAARs for Higher Voting Power Group

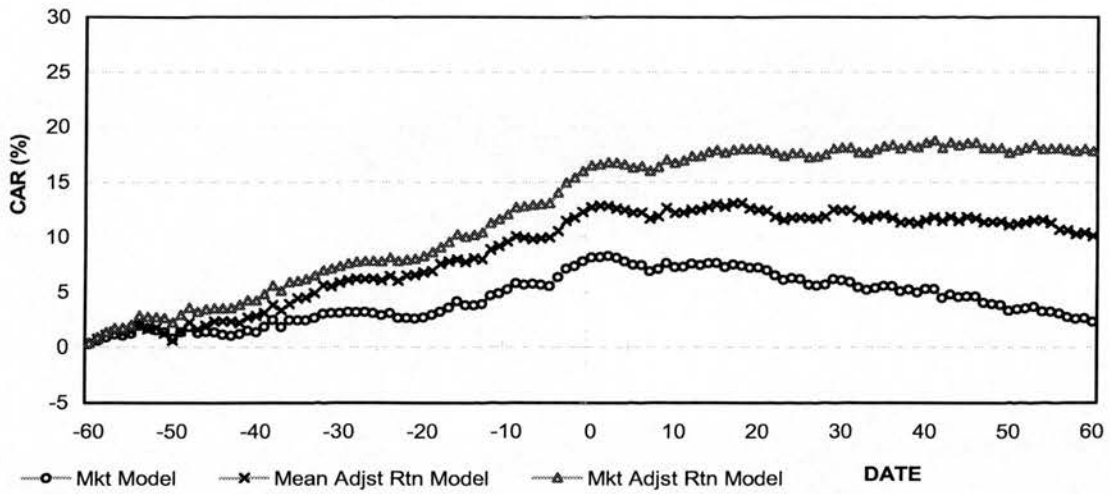

Figure 5.3.6b CAARs for Lower Voting Power Group

Earlier it was argued that higher gains for targets' shareholders are to be expected if a higher percentage of legal-person shares are bought/sold during the corporate restructuring. Table 5.3.6b below further reveals that this is true.

At the 0.05 significance level, only one window (day-20 to day+20) showed a significant change for the lower voting power group. Whereas positive CAARs for all event windows, except day-1 to day 0, for the higher voting groups were identified and were significant. In other words, when acquirers take over a target by buying a smaller percentage of the total shares, this restructuring does not seem to benefit the

Table 5.3.6b CAAR for Voting Power Subgroup

	V-Power (High): 80 in total									V-Power (Low): 80 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - +60 (121 days)	11.69%	3.53	** *	12.40%	3.07	** *	22.72%	6.76	** *	2.30%	0.77		10.14%	2.81	** *	17.83%	5.92	** *
-20 - +20 (41 days)	7.24%	3.75	** *	7.58%	3.22	** *	10.94%	5.59	** *	4.66%	2.69	*	5.91%	2.81	** *	9.94%	5.68	** *
-10 - +10 (21 days)	3.82%	2.77	*	2.78%	1.66		5.95%	4.25	** *	2.37%	1.91		3.02%	2.01		5.07%	4.04	** *
-5 - +5 (11 days)	3.78%	3.78	** *	3.66%	3.01	*	4.78%	4.72	** *	1.82%	2.03		2.37%	2.18		3.31%	3.64	** *
-1 - +1 (3 days)	2.52%	4.83	*	2.10%	3.30		2.78%	5.25	*	0.80%	1.71		1.09%	1.92		1.20%	2.54	
-1 - 0 (2 days)	1.71%	4.01		1.37%	2.65		1.86%	4.31		0.80%	2.08		0.93%	2.00		1.11%	2.86	

** Significant at 0.01 level * Significant at 0.05 level

Table 5.3.6c Pre- and Post-Event CAAR for Voting Power Subgroup

	V-Power (High): 80 in total									V-Power (Low): 80 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - -1 (60 days)	12.07%	5.17	** *	15.55%	5.47	** *	17.73%	7.49	** *	7.81%	3.73	** *	12.30%	4.84	** *	15.98%	7.54	** *
+1 - +60 (60 days)	-1.20%	-0.51		-3.55%	-1.25		4.09%	1.73		-5.87%	-2.80	** *	-2.58%	-1.01		1.34%	0.63	
-20 - -1 (20 days)	6.42%	4.89	** *	8.38%	4.96	** *	8.48%	6.21	** *	5.17%	4.31	** *	5.79%	3.90	** *	8.00%	6.48	** *
+1 - +20 (20 days)	-0.17%	-0.13		-0.96%	-0.59		1.56%	1.14		-0.91%	-0.76		-0.23%	-0.15		1.50%	1.23	
-10 - -1 (10 days)	4.13%	4.34	** *	4.28%	3.69	** *	5.13%	5.31	** *	2.90%	3.39	** *	3.08%	2.97	*	4.31%	4.98	** *
+1 - +10 (10 days)	-1.13%	-1.18		-1.90%	-1.64		-0.08%	-0.08		-0.89%	-1.04		-0.48%	-0.46		0.25%	0.29	
-5 - -1 (5 days)	2.78%	4.12	** *	3.20%	3.90	*	3.32%	4.87	** *	2.12%	3.51	*	2.39%	3.26	*	2.98%	4.87	** *
+1 - +5 (5 days)	0.18%	0.27		0.06%	0.08		0.55%	0.81		-0.66%	-1.08		-0.44%	-0.60		-0.18%	-0.29	

** Significant at 0.01 level * Significant at 0.05 level

targets' shareholders as much compared to transactions involving a higher percentage of total shares. The market appears to be more optimistic in evaluating the acquisition of a larger percentage of shares and it anticipates these activities as value-adding or more value-adding then acquisition of a smaller percentage of shares.

Table 5.3.6c above further presented the CAARs from pre- and post- event windows. It is apparent that value has been created for the higher voting power group before the event date, and compared to the lower voting power group, these positive abnormal returns were not only more significant, but also consistently higher.

Bold t-stats presented in Table 5.3.6d below indicate that the abnormal returns for the two different groups are significantly different for the period day-60 to day+60, day-1 to day+1 and day-1 to day 0. Indeed the very large t-stat value for the period day-1 to day 0 reflects the CAARs shown in Table 5.3.6c: 1.71% for the higher voting power group versus 0.80% for the low voting power group.

The reasons behind this different degree of value creation are varied. The purchase of a larger percentage of the shares itself perhaps already conveys more information than the announcement of buying a smaller percentage. The higher voting power group may be viewed as more capable and more determined to bring changes to the target. With a higher control power, it is also easier for the new owner, via a greater control in the board, to make fundamental changes if needed. That is, with a greater chance to control the target, the acquirer may be expected to be more effective at reducing agency loss than an acquirer who gains a smaller percentage of shares in the target.

Table 5.3.6d T-Test for Voting Power Subgroup

	Vpower-Hi	*Vpower-Lo*	*Vpower-Hi*	*Vpower-Lo*	*Vpower-Hi*	*Vpower-Lo*
	(Day-60 - Day+60)		(Day-60 - Day-1)		(Day+1 - Day+60)	
Mean	0.0966	0.0190	0.2012	0.1302	-0.0200	-0.0978
Variance	0.1048	0.1084	0.1078	0.1141	0.0716	0.0781
Observations	121		60		60	
Pearson Correlation	0.3055		0.1718		0.2325	
Hypothesized Mean Difference	0		0		0	
df	120		59		59	
t Stat	**2.2180**		1.2821		1.7782	
P(T<=t) one-tail	0.0142		0.1024		0.0403	
t Critical one-tail	1.6577		1.6711		1.6711	
P(T<=t) two-tail	0.0284		0.2048		0.0805	
t Critical two-tail	1.9799		2.0010		2.0010	
	(Day-20 - Day+20)		(Day-20 - Day-1)		(Day+1 - Day+20)	
Mean	0.1767	0.1137	0.3298	0.2610	-0.0085	-0.0457
Variance	0.1453	0.1107	0.1179	0.1076	0.1056	0.0728
Observations	41		20		20	
Pearson Correlation	0.3856		0.1118		0.3125	
Hypothesized Mean Difference	0		0		0	
df	40		19		19	
t Stat	1.0145		0.6877		0.4736	
P(T<=t) one-tail	0.1582		0.2500		0.3206	
t Critical one-tail	1.6839		1.7291		1.7291	
P(T<=t) two-tail	0.3165		0.5000		0.6412	
t Critical two-tail	2.0211		2.0930		2.0930	
	(Day-10 - Day+10)		(Day-10 - Day-1)		(Day+1 - Day+10)	
Mean	0.1821	0.1127	0.4133	0.2901	-0.1127	-0.0891
Variance	0.2053	0.1437	0.0880	0.1265	0.1673	0.1060
Observations	21		10		10	
Pearson Correlation	0.5432		0.3608		0.3035	
Hypothesized Mean Difference	0		0		0	
df	20		9		9	
t Stat	0.7895		1.0471		-0.1704	
P(T<=t) one-tail	0.2195		0.1612		0.4342	
t Critical one-tail	1.7247		1.8331		1.8331	
P(T<=t) two-tail	0.4391		0.3224		0.8684	
t Critical two-tail	2.0860		2.2622		2.2622	
	(Day-5 - Day+5)		(Day-5 - Day-1)		(Day+1 - Day+5)	
Mean	0.3438	0.1657	0.5559	0.4247	0.0368	-0.1313
Variance	0.2311	0.1579	0.0760	0.1560	0.2716	0.0357
Observations	11		5		5	
Pearson Correlation	0.5618		0.0915		0.5406	
Hypothesized Mean Difference	0		0		0	
df	10		4		4	
t Stat	1.4146		0.6370		0.8389	
P(T<=t) one-tail	0.0938		0.2794		0.2244	
t Critical one-tail	1.8125		2.1318		2.1318	
P(T<=t) two-tail	0.1876		0.5587		0.4487	
t Critical two-tail	2.2281		2.7764		2.7764	
	(Day-1 - Day+1)				(Day-1 - Day0)	
Mean	0.8407	0.2667			0.8547	0.3983
Variance	0.0019	0.0538			0.0027	0.0037
Observations	3				2	
Pearson Correlation	0.6977				1	
Hypothesized Mean Difference	0				0	
df	2				1	
t Stat	**4.8799**				**72.8117**	
P(T<=t) one-tail	0.0198				0.0044	
t Critical one-tail	2.9200				6.3138	
P(T<=t) two-tail	0.0395				0.0087	
t Critical two-tail	4.3027				12.7062	

In conclusion, the null hypothesis of equality of the mean abnormal returns for the higher and lower voting power groups is rejected for day-60 to day +60, day-1 to day+1 and day-1 to day 0. The market reacts differently to acquisitions if they involve transactions of different percentages of shares of the target. Moreover, the market

appears to favour takeovers involving a higher voting power transfer to those involving a lower voting power transfer.

5.3.7 Previous Performance

Although it could always be argued that even those firms with *good* management, can in theory be improved by *better* management, target firms are believed to be targeted ("punished") because they tend to underperform and hence the inefficient management hypothesis (Brealey and Myers (1991)).

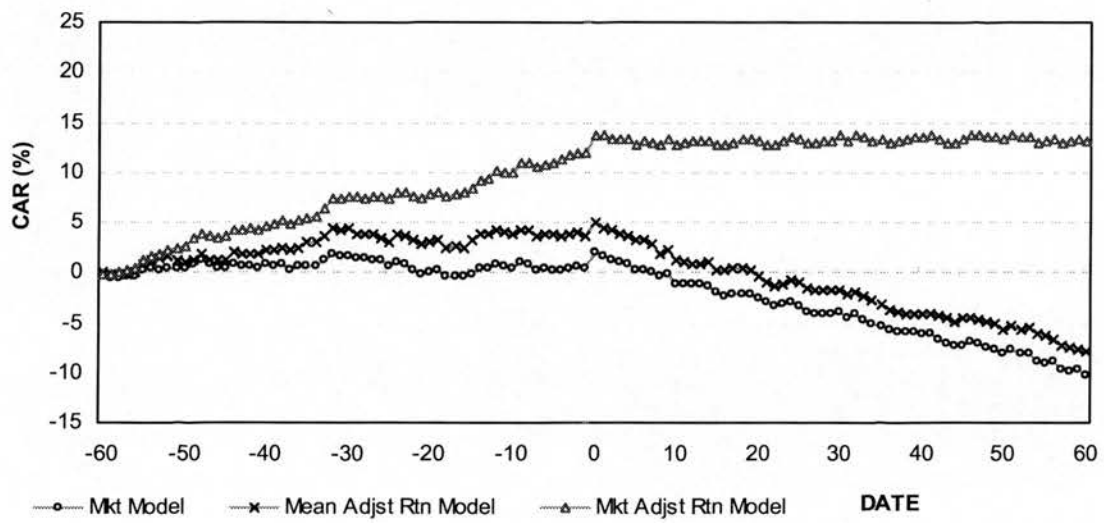

Figure 5.3.7a CAARs for Performing Firms

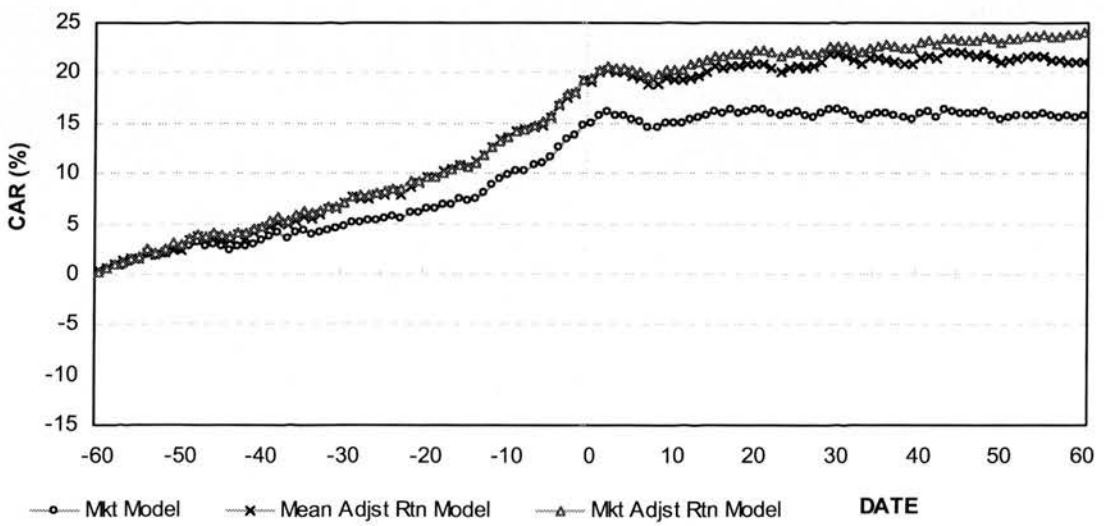

Figure 5.3.7b CAARs for Non-Performing Firm

The CAARs calculated from the Market Model illustrated in Figure 5.3.7a and 5.3.7b show dramatically different patterns for the two groups. A further look at Table 5.3.7a below also reveals the difference.

Table 5.3.7a below shows only three significant positive abnormal returns (0.69% at day-32, -0.69% at day-22 and 0.67% at day-9) for the performing group until day 0 followed by a series of significant negative abnormal return on day+5, +10 and +15, etc. This clearly indicates that the market is "surprised" by the announcement. For the non-performing group though, share prices movement prior to event day shows a familiar pattern as has been observed. The earliest abnormal return is acknowledged on day-54. Moving towards the event day, there are more adjustments (day-51, -49, -37, -22, -16, -13, -12, -11, -9, -4, -3 and day-1).

In addition, the flowing Table 5.3.7b below shows a clear cut difference between the two groups. The CAAR for the performing group over 121-day window is -10.25% (measured by the Market Model and significant at 0.01 level) while the CAAR for the non-performing group over the same period is a significant 15.78%. It is obvious that the restructuring of a performing company makes its shareholders lose out but taking over a non-performing company is welcomed and anticipated to be value-adding by the market.

The CAARs for pre- and post- day 0 presented in Table 5.3.7c further signify the difference. For the non-performing group, CAARs are significantly positive for all the pre-event windows (14.82% for day-60 to -1, 8.67% for day-20 to -1, 5.43% for day-10 to -1 and 3.74% for day-5 to -1). On the other hand, negative CAARs are identified

Table 5.3.7a AAR and CAAR (Day-60 to Day+60) for Previous Performance Subgroup

	Good Performance: 54 in total												Poor Performance: 106 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-60	-0.15	-0.15	-0.44		0.00	0.00	0.00		-0.05	-0.05	-0.16		0.16	0.16	0.66		0.38	0.38	1.27		0.26	0.26	1.07	
-59	-0.36	-0.51	-1.08		-0.06	-0.06	-0.15		-0.06	-0.11	-0.18		0.29	0.45	1.20		0.17	0.55	0.56		0.38	0.64	1.57	
-58	-0.13	-0.64	-0.39		0.00	-0.06	0.00		0.09	-0.02	0.27		0.28	0.73	1.18		0.45	1.00	1.48		0.37	1.01	1.54	
-57	0.19	-0.44	0.58		-0.06	-0.12	-0.16		0.32	0.30	0.94		0.13	0.86	0.53		0.41	1.41	1.35		0.19	1.21	0.79	
-56	0.00	-0.44	0.01		0.20	0.08	0.51		0.19	0.49	0.55		0.27	1.13	1.14		0.18	1.58	0.58		0.31	1.52	1.28	
-55	0.65	0.21	1.94		0.71	0.79	1.81		0.79	1.28	2.32	*	0.17	1.30	0.72		-0.02	1.57	-0.06		0.22	1.73	0.89	
-54	0.14	0.35	0.43		0.54	1.33	1.39		0.30	1.58	0.87		0.69	2.00	2.88	** *	0.68	2.24	2.23	*	0.71	2.44	2.93	** *
-53	-0.07	0.29	-0.20		0.03	1.36	0.07		0.21	1.79	0.63		-0.25	1.74	-1.05		-0.34	1.90	-1.11		-0.23	2.21	-0.96	
-52	0.16	0.45	0.48		0.33	1.68	0.84		0.45	2.24	1.31		0.21	1.95	0.86		0.16	2.07	0.55		0.28	2.49	1.15	
-51	-0.07	0.38	-0.20		-0.46	1.23	-1.17		0.21	2.45	0.62		0.60	2.55	2.47	*	0.28	2.35	0.92		0.61	3.10	2.52	*
-50	0.01	0.39	0.02		-0.10	1.13	-0.25		0.22	2.67	0.64		-0.30	2.25	-1.24		-0.10	2.24	-0.34		-0.22	2.88	-0.89	
-49	0.46	0.85	1.39		0.20	1.33	0.50		0.66	3.33	1.92		0.51	2.76	2.11	*	1.01	3.25	3.33	** *	0.65	3.53	2.67	** *
-48	0.40	1.25	1.20		0.43	1.76	1.10		0.55	3.88	1.62		0.31	3.07	1.28		0.50	3.75	1.67		0.44	3.98	1.83	
-47	-0.48	0.77	-1.43		-0.47	1.28	-1.21		-0.22	3.66	-0.66		-0.42	2.65	-1.75		-0.53	3.23	-1.74		-0.31	3.67	-1.27	
-46	-0.39	0.39	-1.15		-0.11	1.17	-0.28		-0.18	3.47	-0.53		0.33	2.97	1.36		0.49	3.71	1.61		0.40	4.07	1.66	
-45	-0.02	0.37	-0.06		0.02	1.19	0.04		0.15	3.62	0.42		-0.20	2.77	-0.85		-0.14	3.58	-0.45		-0.12	3.95	-0.50	
-44	0.46	0.83	1.38		0.92	2.10	2.35	*	0.61	4.23	1.78		-0.34	2.43	-1.42		-0.30	3.28	-0.99		-0.26	3.69	-1.07	
-43	-0.23	0.60	-0.68		-0.17	1.93	-0.45		-0.09	4.14	-0.25		0.32	2.74	1.32		0.55	3.83	1.81		0.40	4.08	1.64	
-42	0.08	0.68	0.24		-0.04	1.89	-0.10		0.29	4.43	0.85		-0.09	2.65	-0.38		-0.30	3.52	-1.00		-0.04	4.05	-0.15	
-41	-0.19	0.49	-0.57		-0.11	1.78	-0.28		-0.17	4.27	-0.49		0.33	2.98	1.36		0.54	4.07	1.80		0.38	4.43	1.58	
-40	0.29	0.78	0.87		0.35	2.13	0.90		0.42	4.69	1.23		0.29	3.28	1.22		0.49	4.55	1.62		0.36	4.79	1.47	
-39	-0.08	0.70	-0.24		0.07	2.20	0.18		0.08	4.77	0.23		0.38	3.66	1.58		0.06	4.62	0.21		0.42	5.21	1.73	
-38	0.12	0.82	0.35		0.19	2.39	0.49		0.39	5.15	1.13		0.45	4.10	1.85		0.49	5.11	1.62		0.56	5.76	2.30	*
-37	-0.53	0.29	-1.59		-0.22	2.18	-0.55		-0.41	4.74	-1.20		-0.53	3.57	-2.19	*	-0.23	4.88	-0.76		-0.41	5.36	-1.67	
-36	0.29	0.57	0.86		0.31	2.49	0.79		0.47	5.22	1.39		0.45	4.03	1.88		0.43	5.31	1.43		0.53	5.89	2.19	*

Table 5.3.7a (Cont.)

	Good Performance: 54 in total												Poor Performance: 106 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-35	0.04	0.61	0.11		0.44	2.93	1.13		0.24	5.45	0.69		0.20	4.23	0.85		0.41	5.72	1.36		0.30	6.19	1.25	
-34	0.00	0.61	0.01		0.09	3.02	0.22		0.20	5.66	0.59		-0.27	3.96	-1.10		-0.24	5.48	-0.78		-0.14	6.06	-0.56	
-33	0.54	1.16	1.62		0.68	3.69	1.74		0.76	6.42	2.22	*	0.22	4.18	0.89		0.36	5.84	1.19		0.28	6.33	1.14	
-32	0.69	1.84	2.06	*	0.76	4.45	1.94		0.90	7.31	2.63	** *	0.23	4.41	0.95		0.56	6.40	1.84		0.32	6.65	1.30	
-31	-0.25	1.59	-0.75		-0.23	4.22	-0.59		-0.01	7.31	-0.03		0.06	4.47	0.24		0.13	6.53	0.45		0.12	6.77	0.50	
-30	0.06	1.65	0.18		0.10	4.32	0.26		0.21	7.52	0.61		0.25	4.72	1.05		0.50	7.03	1.65		0.37	7.14	1.51	
-29	-0.13	1.52	-0.40		-0.43	3.90	-1.10		0.07	7.58	0.19		0.41	5.13	1.70		0.56	7.59	1.86		0.51	7.65	2.12	*
-28	-0.18	1.34	-0.54		-0.17	3.73	-0.43		-0.16	7.42	-0.46		0.04	5.17	0.17		-0.07	7.52	-0.23		0.15	7.80	0.60	
-27	-0.02	1.31	-0.07		0.00	3.73	0.00		0.18	7.60	0.51		0.10	5.27	0.43		0.01	7.53	0.02		0.13	7.92	0.53	
-26	-0.17	1.14	-0.50		-0.36	3.37	-0.93		-0.03	7.57	-0.07		0.05	5.32	0.19		0.24	7.77	0.81		0.12	8.05	0.50	
-25	-0.49	0.66	-1.46		-0.40	2.97	-1.03		-0.21	7.37	-0.61		0.12	5.44	0.50		0.10	7.87	0.32		0.20	8.25	0.83	
-24	0.45	1.10	1.33		0.82	3.79	2.11	*	0.63	8.00	1.84		0.19	5.63	0.79		0.30	8.17	0.98		0.27	8.52	1.12	
-23	-0.20	0.90	-0.60		-0.10	3.69	-0.26		0.04	8.04	0.13		-0.05	5.58	-0.19		-0.22	7.95	-0.73		0.02	8.54	0.07	
-22	-0.69	0.21	-2.07	*	-0.46	3.23	-1.18		-0.56	7.48	-1.65		0.57	6.16	2.38	*	0.73	8.67	2.41	*	0.66	9.19	2.71	** *
-21	-0.30	-0.09	-0.89		-0.33	2.90	-0.85		-0.07	7.41	-0.20		-0.02	6.13	-0.09		0.41	9.08	1.34		0.08	9.28	0.34	
-20	0.23	0.14	0.68		0.14	3.04	0.35		0.44	7.85	1.30		0.36	6.49	1.49		0.51	9.58	1.67		0.44	9.71	1.81	
-19	0.03	0.17	0.09		0.08	3.12	0.21		0.15	8.01	0.45		-0.05	6.44	-0.22		0.08	9.66	0.27		-0.02	9.69	-0.09	
-18	-0.56	-0.39	-1.68		-0.68	2.44	-1.75		-0.35	7.66	-1.02		0.38	6.82	1.57		0.57	10.24	1.89		0.41	10.10	1.67	
-17	0.02	-0.37	0.07		0.22	2.66	0.56		0.19	7.85	0.56		0.14	6.96	0.58		0.22	10.45	0.71		0.23	10.33	0.96	
-16	-0.05	-0.43	-0.16		-0.16	2.50	-0.40		0.12	7.97	0.36		0.51	7.47	2.13	*	0.45	10.90	1.47		0.56	10.89	2.31	*
-15	0.28	-0.15	0.83		0.67	3.17	1.71		0.47	8.45	1.38		-0.27	7.20	-1.13		-0.23	10.67	-0.77		-0.23	10.66	-0.95	
-14	0.50	0.35	1.49		0.73	3.90	1.87		0.62	9.07	1.82		0.17	7.37	0.70		0.46	11.13	1.53		0.29	10.95	1.21	
-13	0.03	0.38	0.09		-0.13	3.77	-0.33		0.24	9.31	0.70		0.69	8.06	2.87	** *	0.59	11.72	1.96		0.77	11.72	3.16	** *
-12	0.44	0.82	1.31		0.50	4.27	1.28		0.74	10.05	2.17	*	0.77	8.84	3.22	** *	0.84	12.56	2.79	** *	0.83	12.55	3.42	** *
-11	-0.24	0.58	-0.72		-0.31	3.96	-0.79		-0.01	10.04	-0.04		0.56	9.40	2.34	*	0.88	13.44	2.91	** *	0.65	13.20	2.70	** *

Table 5.3.7a (Cont.)

	Good Performance: 54 in total												Poor Performance: 106 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
-10	-0.14	0.44	-0.41		-0.09	3.87	-0.22		-0.03	10.00	-0.10		0.39	9.79	1.61		0.21	13.65	0.70		0.43	13.63	1.76	
-9	0.67	1.11	2.00	*	0.39	4.26	1.00		0.93	10.94	2.73	** *	0.51	10.30	2.13	*	0.52	14.17	1.72		0.60	14.23	2.49	*
-8	-0.20	0.91	-0.59		-0.08	4.18	-0.21		0.09	11.03	0.27		0.01	10.32	0.06		0.23	14.40	0.75		0.11	14.34	0.46	
-7	-0.57	0.34	-1.70		-0.62	3.57	-1.58		-0.48	10.55	-1.40		0.45	10.76	1.86		0.24	14.64	0.79		0.47	14.82	1.95	
-6	0.09	0.43	0.27		0.29	3.86	0.75		0.21	10.76	0.61		0.32	11.09	1.33		0.19	14.83	0.63		0.38	15.20	1.59	
-5	-0.15	0.29	-0.44		-0.05	3.80	-0.14		0.16	10.92	0.48		0.43	11.52	1.80		0.72	15.56	2.40	*	0.58	15.78	2.40	*
-4	0.06	0.34	0.17		-0.26	3.55	-0.66		0.37	11.29	1.09		1.10	12.61	4.55	** *	1.13	16.69	3.74	** *	1.14	16.92	4.69	** *
-3	0.09	0.43	0.27		0.33	3.88	0.84		0.35	11.64	1.01		0.85	13.47	3.55	** *	0.83	17.52	2.75	** *	0.90	17.82	3.70	** *
-2	0.13	0.56	0.38		0.13	4.00	0.33		0.32	11.96	0.94		0.25	13.71	1.02		0.34	17.86	1.12		0.35	18.16	1.43	
-1	-0.20	0.36	-0.59		-0.47	3.54	-1.20		-0.01	11.95	-0.03		1.11	14.82	4.59	** *	1.36	19.21	4.49	** *	1.19	19.35	4.90	** *
0	1.59	1.96	4.76	** *	1.40	4.93	3.58	** *	1.80	13.75	5.27	** *	0.07	14.89	0.31		-0.09	19.12	-0.31		0.14	19.49	0.59	
1	-0.32	1.63	-0.97		-0.45	4.48	-1.16		-0.10	13.66	-0.28		0.78	15.68	3.24	** *	0.90	20.02	2.97	** *	0.81	20.31	3.34	** *
2	-0.36	1.28	-1.07		-0.35	4.13	-0.90		-0.32	13.34	-0.93		0.38	16.05	1.56		0.33	20.35	1.10		0.40	20.70	1.65	
3	-0.15	1.12	-0.45		-0.42	3.71	-1.07		-0.03	13.31	-0.09		-0.36	15.69	-1.50		-0.21	20.14	-0.69		-0.28	20.43	-1.14	
4	-0.22	0.91	-0.65		-0.04	3.68	-0.10		0.05	13.36	0.16		-0.03	15.66	-0.14		-0.12	20.02	-0.41		0.07	20.49	0.27	
5	-0.66	0.25	-1.98	*	-0.42	3.25	-1.09		-0.57	12.79	-1.67		-0.25	15.41	-1.02		-0.32	19.69	-1.07		-0.23	20.27	-0.94	
6	0.10	0.34	0.29		-0.08	3.17	-0.20		0.33	13.12	0.97		-0.30	15.11	-1.24		-0.31	19.39	-1.02		-0.20	20.07	-0.82	
7	-0.31	0.03	-0.92		-0.40	2.77	-1.04		-0.12	13.00	-0.36		-0.52	14.59	-2.17	*	-0.42	18.97	-1.38		-0.39	19.68	-1.61	
8	-0.47	-0.43	-1.40		-0.86	1.91	-2.21	*	-0.22	12.78	-0.63		0.03	14.62	0.14		0.01	18.98	0.02		0.12	19.80	0.51	
9	0.28	-0.16	0.83		0.23	2.14	0.59		0.52	13.30	1.52		0.35	14.97	1.45		0.46	19.43	1.52		0.40	20.20	1.63	
10	-0.89	-1.04	-2.65	** *	-0.86	1.28	-2.21	*	-0.66	12.65	-1.92		-0.07	14.90	-0.29		-0.25	19.19	-0.81		-0.01	20.19	-0.04	

Table 5.3.7a (Cont.)

	Good Performance: 54 in total												Poor Performance: 106 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
11	-0.01	-1.05	-0.03		-0.22	1.06	-0.56		0.24	12.88	0.70		0.10	15.01	0.43		0.06	19.25	0.19		0.17	20.35	0.69	
12	-0.04	-1.09	-0.11		-0.13	0.93	-0.33		0.14	13.02	0.40		0.36	15.36	1.49		0.28	19.52	0.92		0.42	20.78	1.75	
13	-0.07	-1.16	-0.21		-0.01	0.92	-0.03		0.10	13.12	0.29		0.16	15.53	0.68		0.07	19.60	0.25		0.22	21.00	0.91	
14	-0.12	-1.28	-0.37		0.04	0.96	0.09		0.09	13.21	0.26		0.20	15.73	0.85		0.52	20.12	1.73		0.31	21.31	1.27	
15	-0.71	-1.99	-2.11	*	-0.62	0.34	-1.59		-0.50	12.71	-1.45		0.31	16.04	1.27		0.46	20.58	1.53		0.41	21.72	1.70	
16	-0.27	-2.26	-0.82		-0.06	0.27	-0.16		-0.09	12.63	-0.25		-0.16	15.88	-0.66		-0.10	20.48	-0.34		-0.15	21.58	-0.60	
17	0.08	-2.18	0.23		0.15	0.42	0.38		0.30	12.93	0.88		0.41	16.29	1.71		0.22	20.70	0.71		0.36	21.94	1.49	
18	0.13	-2.05	0.40		-0.03	0.39	-0.09		0.30	13.22	0.87		-0.28	16.01	-1.16		0.02	20.72	0.06		-0.19	21.75	-0.77	
19	-0.06	-2.11	-0.18		-0.09	0.30	-0.22		0.12	13.34	0.34		0.11	16.12	0.47		0.12	20.83	0.38		0.19	21.94	0.77	
20	-0.40	-2.51	-1.20		-0.61	-0.31	-1.57		-0.29	13.05	-0.86		0.23	16.35	0.95		0.06	20.89	0.21		0.23	22.17	0.95	
21	-0.43	-2.94	-1.28		-0.54	-0.85	-1.40		-0.23	12.82	-0.67		0.01	16.36	0.02		-0.04	20.85	-0.14		0.10	22.26	0.41	
22	-0.36	-3.29	-1.06		-0.48	-1.33	-1.22		-0.11	12.71	-0.33		-0.36	16.00	-1.48		-0.31	20.54	-1.04		-0.28	21.99	-1.15	
23	0.23	-3.07	0.68		0.22	-1.11	0.58		0.46	13.17	1.35		-0.29	15.72	-1.19		-0.38	20.16	-1.25		-0.25	21.74	-1.01	
24	0.17	-2.90	0.49		0.36	-0.75	0.91		0.34	13.51	0.99		0.18	15.90	0.76		0.29	20.45	0.95		0.23	21.97	0.95	
25	-0.49	-3.39	-1.45		-0.27	-1.02	-0.70		-0.25	13.26	-0.72		0.17	16.06	0.69		0.24	20.69	0.80		0.18	22.15	0.75	
26	-0.49	-3.88	-1.47		-0.59	-1.61	-1.51		-0.29	12.97	-0.86		-0.34	15.72	-1.41		-0.12	20.57	-0.40		-0.27	21.89	-1.10	
27	-0.18	-4.06	-0.54		-0.14	-1.76	-0.37		-0.08	12.88	-0.24		-0.10	15.62	-0.43		0.16	20.73	0.53		-0.01	21.88	-0.02	
28	-0.05	-4.11	-0.14		0.07	-1.69	0.17		0.20	13.08	0.57		0.26	15.88	1.06		0.34	21.07	1.12		0.23	22.11	0.94	
29	-0.10	-4.20	-0.29		-0.13	-1.82	-0.32		0.01	13.09	0.02		0.45	16.32	1.85		0.74	21.81	2.46	*	0.50	22.61	2.07	*
30	0.37	-3.83	1.12		0.12	-1.69	0.32		0.64	13.73	1.87		-0.01	16.32	-0.02		0.09	21.90	0.29		0.11	22.73	0.47	
31	-0.71	-4.54	-2.13	*	-0.44	-2.13	-1.13		-0.57	13.16	-1.66		-0.09	16.22	-0.39		-0.24	21.66	-0.78		0.00	22.72	-0.02	
32	0.35	-4.19	1.05		0.23	-1.90	0.60		0.53	13.69	1.56		-0.50	15.73	-2.06	*	-0.50	21.17	-1.64		-0.45	22.27	-1.87	
33	-0.50	-4.69	-1.49		-0.48	-2.38	-1.23		-0.21	13.48	-0.61		-0.30	15.42	-1.26		-0.22	20.95	-0.73		-0.21	22.06	-0.86	
34	-0.51	-5.19	-1.51		-0.40	-2.77	-1.01		-0.34	13.15	-0.98		0.37	15.80	1.55		0.43	21.38	1.44		0.45	22.51	1.86	
35	-0.12	-5.31	-0.35		-0.44	-3.22	-1.13		0.09	13.24	0.27		0.08	15.88	0.33		0.11	21.49	0.35		0.14	22.65	0.56	

Table 5.3.7a (Cont.)

	Good Performance: 54 in total												Poor Performance: 106 in total											
	Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model				Mkt Model				Mean Adjst Rtn Model				Mkt Adjst Rtn Model			
Day	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig	AAR (%)	CAAR (%)	t	sig
36	-0.48	-5.79	-1.42		-0.58	-3.80	-1.49		-0.27	12.97	-0.79		0.09	15.97	0.39		-0.20	21.28	-0.67		0.18	22.83	0.75	
37	-0.17	-5.95	-0.51		-0.04	-3.84	-0.11		0.06	13.03	0.19		-0.22	15.75	-0.93		-0.29	20.99	-0.96		-0.18	22.65	-0.73	
38	0.07	-5.88	0.22		-0.22	-4.06	-0.56		0.27	13.30	0.80		-0.18	15.57	-0.73		-0.08	20.91	-0.27		-0.14	22.51	-0.59	
39	0.04	-5.84	0.12		-0.02	-4.08	-0.05		0.15	13.45	0.44		-0.16	15.41	-0.67		-0.04	20.87	-0.14		-0.11	22.40	-0.46	
40	-0.15	-5.99	-0.45		-0.01	-4.09	-0.03		0.04	13.50	0.13		0.61	16.02	2.55	*	0.55	21.42	1.82		0.66	23.06	2.74	** *
41	-0.08	-6.07	-0.23		0.07	-4.02	0.18		0.12	13.62	0.35		0.04	16.07	0.18		0.19	21.61	0.63		0.12	23.18	0.50	
42	-0.54	-6.61	-1.61		-0.36	-4.38	-0.92		-0.37	13.25	-1.08		-0.49	15.58	-2.03	*	-0.23	21.38	-0.74		-0.40	22.78	-1.67	
43	-0.46	-7.07	-1.37		-0.20	-4.58	-0.50		-0.29	12.95	-0.85		0.67	16.24	2.76	** *	0.61	21.99	2.03	*	0.73	23.50	2.99	** *
44	-0.15	-7.21	-0.44		-0.24	-4.81	-0.61		0.01	12.96	0.02		-0.07	16.17	-0.30		-0.02	21.98	-0.06		-0.04	23.47	-0.14	
45	0.03	-7.19	0.08		0.22	-4.60	0.55		0.27	13.23	0.78		-0.16	16.01	-0.67		0.06	22.04	0.20		-0.14	23.32	-0.59	
46	0.33	-6.85	1.00		0.15	-4.44	0.39		0.44	13.67	1.30		-0.10	15.91	-0.41		-0.23	21.81	-0.75		-0.05	23.27	-0.21	
47	-0.18	-7.03	-0.54		-0.28	-4.72	-0.71		0.01	13.68	0.02		0.00	15.91	-0.02		-0.06	21.75	-0.21		0.05	23.32	0.20	
48	-0.42	-7.45	-1.25		-0.14	-4.86	-0.36		-0.18	13.49	-0.54		0.20	16.11	0.83		0.04	21.79	0.14		0.28	23.60	1.15	
49	-0.14	-7.59	-0.42		-0.25	-5.11	-0.64		0.02	13.52	0.07		-0.32	15.78	-1.33		-0.27	21.53	-0.88		-0.25	23.35	-1.04	
50	-0.44	-8.03	-1.32		-0.60	-5.71	-1.54		-0.27	13.24	-0.79		-0.39	15.39	-1.62		-0.38	21.15	-1.25		-0.32	23.03	-1.31	
51	0.33	-7.70	0.99		0.44	-5.27	1.13		0.47	13.72	1.39		0.23	15.63	0.97		0.16	21.30	0.51		0.30	23.33	1.23	
52	-0.28	-7.98	-0.84		-0.36	-5.63	-0.93		-0.16	13.56	-0.46		0.04	15.67	0.18		0.24	21.54	0.80		0.15	23.48	0.64	
53	-0.17	-8.15	-0.50		0.12	-5.51	0.31		0.01	13.58	0.04		0.10	15.77	0.43		0.01	21.55	0.03		0.15	23.64	0.64	
54	-0.73	-8.88	-2.17	*	-0.48	-5.99	-1.23		-0.62	12.95	-1.82		-0.04	15.73	-0.18		0.17	21.73	0.57		-0.02	23.62	-0.09	
55	-0.11	-8.99	-0.33		-0.38	-6.37	-0.96		0.11	13.06	0.31		0.17	15.90	0.72		-0.14	21.59	-0.46		0.16	23.78	0.67	
56	0.06	-8.93	0.18		-0.30	-6.67	-0.76		0.33	13.39	0.96		-0.14	15.76	-0.58		-0.35	21.24	-1.16		-0.07	23.71	-0.28	
57	-0.67	-9.60	-2.01	*	-0.52	-7.19	-1.34		-0.37	13.02	-1.09		-0.13	15.64	-0.53		-0.03	21.20	-0.11		-0.03	23.68	-0.11	
58	-0.16	-9.76	-0.49		-0.29	-7.48	-0.74		0.02	13.03	0.05		0.01	15.65	0.05		-0.22	20.99	-0.72		0.04	23.72	0.15	
59	0.04	-9.72	0.12		-0.17	-7.65	-0.44		0.28	13.31	0.83		-0.02	15.62	-0.09		-0.02	20.97	-0.07		0.02	23.74	0.06	
60	-0.53	-10.25	-1.58		-0.27	-7.93	-0.70		-0.26	13.05	-0.77		0.16	15.78	0.65		0.09	21.05	0.28		0.22	23.95	0.89	

** Significant at 0.01 level; * Significant at 0.05 level

Table 5.3.7b CAAR for Previous Performance Subgroup

	Good Performance: 54 in total									Poor Performance: 106 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - +60 (121 days)	-10.25%	-2.79	** *	-7.93%	-1.85		13.05%	3.47	** *	15.78%	5.96	** *	21.05%	6.33	** *	23.95%	8.98	** *
-20 - +20 (41 days)	-2.42%	-1.13		-3.21%	-1.29		5.64%	2.58	*	10.22%	6.63	** *	11.82%	6.11	** *	12.89%	8.31	** *
-10 - +10 (21 days)	-1.62%	-1.06		-2.68%	-1.50		2.61%	1.66		5.50%	4.98	** *	5.75%	4.15	** *	6.99%	6.29	** *
-5 - +5 (11 days)	-0.19%	-0.17		-0.61%	-0.47		2.03%	1.79		4.32%	5.41	** *	4.86%	4.85	** *	5.07%	6.30	** *
-1 - +1 (3 days)	1.07%	1.85		0.48%	0.71		1.69%	2.86		1.96%	4.70	*	2.16%	4.13		2.14%	5.10	*
-1 - 0 (2 days)	1.40%	2.95		0.93%	1.69		1.79%	3.70		1.18%	3.46		1.26%	2.96		1.33%	3.88	

** Significant at 0.01 level * Significant at 0.05 level

Table 5.3.7c Pre- and Post-Event CAAR for Previous Performace Subgroup

	Good Performance: 54 in total									Poor Performance: 106 in total								
	Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model			Mkt Model			Mean Adjst Rtn Model			Mkt Adjst Rtn Model		
Event Window	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig	CAAR	t	sig
-60 - -1 (60 days)	0.36%	0.14		3.54%	1.17		11.95%	4.51	** *	14.82%	7.94	** *	19.21%	8.21	** *	19.35%	10.31	** *
+1 - +60 (60 days)	-12.21%	-4.71	** *	-12.86%	-4.26	** *	-0.70%	-0.26		0.89%	0.48		1.93%	0.82		4.46%	2.37	*
-20 - -1 (20 days)	0.15%	0.30		0.30%	0.36		4.47%	2.97	** *	8.67%	8.06	** *	10.54%	7.50	** *	10.16%	9.30	** *
+1 - +20 (20 days)	-4.47%	-2.99	** *	-5.24%	-3.01	** *	-0.70%	-0.46		1.46%	1.35		1.77%	1.31		2.67%	2.47	*
-10 - -1 (10 days)	-0.21%	-0.20		-0.42%	-0.34		1.91%	1.77		5.42%	7.11	** *	5.77%	6.04	** *	6.15%	8.03	** *
+1 - +10 (10 days)	-3.00%	-2.84	*	-3.66%	-2.97	*	-1.11%	-1.02		0.01%	0.01		0.07%	0.07		0.69%	0.90	
-5 - -1 (5 days)	-0.07%	-0.09		-0.32%	-0.37		1.19%	1.56		3.74%	6.93	** *	4.38%	6.49	** *	4.15%	7.66	** *
+1 - +5 (5 days)	-1.71%	-2.29		-1.68%	-1.93		-0.96%	-1.26		0.52%	0.96		0.57%	0.85		0.77%	1.42	

** Significant at 0.01 level * Significant at 0.05 level

for the performing group after the event day (-12.21% for day+1 to +60, -4.47% for day+1 to +20 and -3.00% for day+1 to +10).

Indeed, the empirical results in this section reveal the most interesting finding in this chapter. The differences of CAARs between the two groups have clear indications:
1) M&As create value for the non-performing targets, i.e. those companies that have experienced a decline in their profitability, and the targets' shareholders gain from such activities.

2) When a target is either recovering from a bad performing history or evolving from a good performing history, measured by $\Delta NROA$, then such restructuring is not viewed as "value-adding" by the market, on the contrary, it is "value-demolishing" and the shareholders of the target lose wealth.

3) Value is created before the announcement for the non-performing targets and value is demolished only after the announcement for the performing targets. This indicates that the market could anticipate the forthcoming restructurings involving poorly-performing targets, but it failed to anticipate that a well-performing company to be targetd.

Table 5.3.7d below shows the t-values for abnormal returns across all event windows and shows that the abnormal returns for the non-performing and the performing groups are significantly different for periods of day-60 to +60, day-60 to -1, day+1 to +60, day-20 to +20, day-20 to -1, day+1 to day+20, day-10 to +10, day-10 to -1 and

Table 5.3.7d T-Test for Previous Performance Subgroup

	Perform(+)	*Perform(-)*	*Perform(+)*	*Perform(-)*	*Perform(+)*	*Perform(-)*
	(Day-60 - Day+60)		(Day-60 - Day-1)		(Day+1 - Day+60)	
Mean	-0.0847	0.1304	0.0061	0.2470	-0.2035	0.0148
Variance	0.1291	0.1094	0.1024	0.1123	0.0897	0.0828
Observations	121		60		60	
Pearson Correlation	0.1289		0.0837		-0.0109	
Hypothesized Mean Difference	0		0		0	
df	120		59		59	
t Stat	**-5.1911**		**-4.2073**		**-4.0499**	
P(T<=t) one-tail	0.0000		0.0000		0.0001	
t Critical one-tail	1.6577		1.6711		1.6711	
P(T<=t) two-tail	0.0000		0.0001		0.0002	
t Critical two-tail	1.9799		2.0010		2.0010	
	(Day-20 - Day+20)		(Day-20 - Day-1)		(Day+1 - Day+20)	
Mean	-0.0591	0.2492	0.0226	0.4343	-0.2234	0.0729
Variance	0.1745	0.1427	0.0980	0.1265	0.0902	0.1034
Observations	41		20		20	
Pearson Correlation	0.0846		-0.0806		0.0612	
Hypothesized Mean Difference	0		0		0	
df	40		19		19	
t Stat	**-3.6630**		**-3.7391**		**-3.1083**	
P(T<=t) one-tail	0.0004		0.0007		0.0029	
t Critical one-tail	1.6839		1.7291		1.7291	
P(T<=t) two-tail	0.0007		0.0014		0.0058	
t Critical two-tail	2.0211		2.0930		2.0930	
	(Day-10 - Day+10)		(Day-10 - Day-1)		(Day+1 - Day+10)	
Mean	-0.0772	0.2618	-0.0214	0.5418	-0.3002	0.0006
Variance	0.2634	0.2058	0.1024	0.1315	0.1140	0.1591
Observations	21		10		10	
Pearson Correlation	0.1302		0.0637		0.0949	
Hypothesized Mean Difference	0		0		0	
df	20		9		9	
t Stat	**-2.4306**		**-3.8048**		-1.9115	
P(T<=t) one-tail	0.0123		0.0021		0.0441	
t Critical one-tail	1.7247		1.8331		1.8331	
P(T<=t) two-tail	0.0246		0.0042		0.0883	
t Critical two-tail	2.0860		2.2622		2.2622	
	(Day-5 - Day+5)		(Day-5 - Day-1)		(Day+1 - Day+5)	
Mean	-0.0169	0.3932	-0.0136	0.7470	-0.3424	0.1032
Variance	0.3364	0.2649	0.0218	0.1530	0.0384	0.2221
Observations	11		5		5	
Pearson Correlation	-0.0273		-0.2570		0.0384	
Hypothesized Mean Difference	0		0		0	
df	10		4		4	
t Stat	-1.7307		**-3.7607**		-1.9791	
P(T<=t) one-tail	0.0571		0.0099		0.0595	
t Critical one-tail	1.8125		2.1318		2.1318	
P(T<=t) two-tail	0.1142		0.0198		0.1189	
t Critical two-tail	2.2281		2.7764		2.7764	
	(Day-1 - Day+1)				(Day-1 - Day0)	
Mean	0.3577	0.6535			0.6981	0.5900
Variance	1.1494	0.2784			1.6036	0.5326
Observations	3				2	
Pearson Correlation	-0.9315				-1	
Hypothesized Mean Difference	0				0	
df	2				1	
t Stat	-0.3252				0.0766	
P(T<=t) one-tail	0.3880				0.4757	
t Critical one-tail	2.9200				6.3138	
P(T<=t) two-tail	0.7759				0.9513	
t Critical two-tail	4.3027				12.7062	

day-5 to -1. These convincing results suggest previous performance has a vial impact on target shareholders gain around the M&A announcements.

Previous Western empirical studies generally conclude that target shareholders enjoyed significantly positive returns (most are economically significant too) around the M&A announcements in almost all cases. Jensen and Ruback (1983), Datta et al. (1992) and Bruner (2002) provide extensive surveys of this literature, and report average cumulative abnormal returns in the 20–30% range.

While the study carried out in Chapter 4 is consistent with the western literature that value is created and that on average target shareholders gain from corporate restructuring in China, Section 5.3.7 further shows that not all targets benefit from M&As. Previously non-performing targets gain and previously performing targets lose.

These give support to the value maximisation theory (Jensen (1998)) and inefficient management hypothesis (Brealey and Myers (1991)). A poorly performing firm's management is "punished" by a takeover, and the market anticipates that the takeover is beneficial and would improve the target's performance, hence, value is created.

These results also support the non-value maximising conjectures such as the agency cost theory (Jensen (1986)) and hubris hypotheses (Roll (1986)). When a target is performing well, there is *relatively* less room left for improvement. If an acquirer is to take over a well-performing target, driven by the manager's ambition or miscalculation, or by a governmental "order", the market will view this takeover as value-destroying!

The findings in this section are of particular importance in China as they have the following three practical implications for investors, managers and the government.

The first implication is minor yet important. Chinese domestic investors appear to be able to anticipate what is implied in the accounting data published by the listed firms and make a good use of it to assist their investment decision making. This also clarifies why Net Return on Assets (NROA) ratios are indeed used by the CSRC as a basic indicator to measure firm performance.

A more important implication is that if the managers propose to take over a well-performing target, they are, from a pure economic point of view, making a wrong investment decision, as was shown by the empirical results. Whereas the managers could also be motivated by their personal ambitions, political desire, or simply wrong calculation, a more interesting question is raised: what if they are "ordered" by the government to do so?

The most important implication is that government may not be rational in its intervention. Governmental involvement in SOEs has changed considerably over the past two decades in China. Certain control has been loosened and compared to before the reform, SOEs now enjoy more autonomy. Nonetheless, governmental intervening is inevitable due to the transitional nature of the Chinese economy. Such interventions can be shown from changes in a national law to a specific personnel change in a specific firm. The consequences of these interventions are not entirely satisfactory. Forcing a "wrong" takeover and subsequently approving the proposal, for instance, harm the investors and decrease the target's value. More appropriate valuation and approving procedures perhaps should be considered and followed.

Having analysed the above, one should bear in mind the following argument when attempting to criticise the irrational government intervention. On one hand, the government may want to force listed firms to face greater competition and to increase the efficiency of credit allocation to more SOEs. On the other hand, the government has strong incentives to provide financial support to *all* firms and to prevent bankruptcy and job losses, because of the heavy political and social costs that would be engendered. Maybe after all, the government's intervention is intentional, and, even rational.

5.4 Conclusion

By dividing the data sample into different sub-groups according to seven different variables, wealth gains due to acquisitions of control in China have been studied in detail. The explanatory variables are: location, industry effect, time line, firm sizes, A share proportion, voting power and previous performance. Some of the variables prove to have more explanatory power than others.

It is found that geographic variable does not make a difference in target shareholders' gain around the announcements of M&As or acquisitions of control in China. Whether targets are listed in the SZSE or SHSE, they do not appear to receive different degrees of abnormal returns.

The stock markets in China may prefer non-industrial restructurings to industrial ones as the shareholders of the industrial group seem to gain more. It is perhaps worthwhile pointing out that the industrial classification methods were reviewed and changed in

2001, which may alter the future findings using more recent data. Western literature suggests that the degree of relatedness between the businesses of the buyer and seller is positively associated with returns (Comment and Jarrell (1995), Healy et al. (1992, 1997)). This synergy hypothesis has not been tested in this chapter since it is difficult to identify buyers' industry types. However, with more data becoming available, an examination of this factor may shed light on whether synergy hypothesis applies to the M&As or acquisitions of control in China.

The introduction of the Securities Law has brought improvements in the regulatory environment in the Chinese stock markets and such improvements have been reflected in the sub-groups' performances. On September 28, 2002, the CSRC further promulgated Measures to Administer the Takeover of Listed Companies (the Takeover Rules) and Rules of Management of Disclosure Requirements for Changes of Controlling Shareholders of Listed Companies (the "Disclosure Requirements") with both becoming effective from 1st December 2002. These two regulations are similar to those from other mature markets and serve as helpful additions to the Securities Law in regulating takeovers. They are drafted so comprehensively that they apply to a wide range of possible transactions, such as hostile takeovers, which are unlikely to be permitted in a foreseeable future. The impact of these two important regulations on gains around the announcements of acquisitions of control remains a topic for future research.

Target firm size effects are not apparent in the Chinese M&As or acquisitions of control according to the empirical findings presented in this chapter. However, limitations regarding the variable selection and methodological issues have been noted.

Another unique variable in the Chinese context is proved to be of no explanatory power either. It is found that the degree of abnormal returns around the announcements of acquisitions of control for the target firms is the same regardless of the existing A share percentages in the targets' share structure. This result is disappointing initially. However, if the private ownership (A share percentage) does not have a significant impact on firm performance and its restructuring activities, then the government ownership (state share percentage and legal-person share percentage) is perhaps expected to be of more explanatory power and this conjecture may confirm previous research results of Sun et al. (2003).

This chapter extends research regarding the voting-power effects into the Chinese context and confirms that voting power has a positive impact on the abnormal returns of target shareholders. Higher gains are associated with higher voting power involved, when measured by the percentage of the legal-person shares traded. This gives support to Shleifer and Vishny (1986)'s findings that a company's expected profit is increased by large shareholders, relative to their percentage of ownership.

Last but not least, previous performance proves to be an important variable and the empirical results reveal the most interesting findings in this chapter. If targets are poorly managed and have a bad performing history, their shareholders gain more upon being taken over. If the targets, on the other hand, are performing well and have a good/recovering performing history, the restructurings actually destroy value.

Since there are numerous factors that could potentially affect the gains of M&As, it is extremely difficult to separate the effect of each factor and to examine all of these potentialities. However, the empirical results presented in this chapter provide some helpful information and allow one to go further in addressing the potential sources from the gains from M&As or acquisitions of control in China.

Chapter 6 Conclusion

6.0 Closing Remarks

During the writing of the thesis in 2004, China International Trust and Investment Corporation announced an offer to acquire 51% of Guangfa Securities for US$217 million[140]. Shanghai Automotive Industry Corporation, China's largest carmaker, was reported to be consolidating all its key assets into a new holding company as a prelude to listing its shares overseas.[141] More recently, China Construction Bank raised more than US$6,000 million via its initial public offer (IPO) in 2006, making it the biggest IPO in seven years in Asia since 1999.[142] These activities would not have been possible 20 years ago in China when the concepts of "stock", "restructuring" and "IPO", etc. only existed in the text books about western economies. However, at present, there are over 1,300 companies listed on the region's two stock exchanges and corporate restructurings are common, with many involving listed firms as well. Indeed, the financial markets in China have developed dramatically and this research has addressed one of its most high profile features – mergers and acquisitions (M&A). In particular, the study attempted to answer the question as to whether M&A or acquisition of control created value in China.

The following section 6.1 summarises the thesis and the empirical findings. Section 6.2 critically reviews the findings, by identifying possible limitations in this research and suggests some future research. Final thoughts are presented in section 6.3

[140] China Daily, 29 September 2004.
[141] Program from BBC News 24, viewed in November, 2004.
[142] http://news.yahoo.com, accessed December, 2006.

6.1 Summary

As the biggest developing country in the world, China has maintained an average of 7.9% annual GDP growth rate 7 years continuously since 1998 according to the World Bank.[143] Its stock markets have expanded radically over the last 15 years. M&A activities have grown from non-existence to being one of the most influential drivers of corporate restructurings in Asia. More research has become available regarding China's stock markets, however, relatively less is known regarding its M&A activities.

This thesis comprehensively introduced the M&A activities in China and related issues, namely, the SOE reform schemes and the stock markets. It reviewed how M&As in China have developed to become what they are today. In particular, it documented the major changes in the relevant legislation over the last 20 years or so, covering from the Bankruptcy Law promulgated in 1986 to some of the latest regulations and therefore contributed to knowledge by providing a full picture of the evolving nature of Chinese regulations governing M&As. Overall the legal framework has been constantly modified to be more comprehensive.

However, the regulations have been issued piecemeal. A vast volume of regulations has been issued over the last 20 years, from various governing bodies ranging from the State Council, the Ministry of Finance, the People's Bank of China, and the China Securities Regulatory Commission to municipal governments. This easily leads to overlaps and causes confusion. In addition, as shown in Chapter 2, it is very common

[143] http://www.worldbank.org/data/countrydata/countrydata.html, accessed May, 2005.

in China for new regulations to be labelled "provisional" or "interim". This seems to indicate that they are to be revised, yet many of these "provisional" or "interim" regulations remain effective for years with few changes. Moreover, regulations in China can appear in the form of a "circular," a "notice," or similar and this adds to the possible confusion. Last but not least, some of the most important regulations have only become effective in 2002[144]. The legislators appear to have lagged behind the development of the restructuring activity. In short, before China promulgates a single M&A law, the regulations will remain quite a maze.

This study empirically tests the joint hypothesis that 1) the domestic Chinese A share markets are efficient in terms of quickly and fully anticipating new information and 2) target firms in China gain through acquisitions of control. It is found: 1) that the Chinese stock markets' reaction towards announcements of acquisitions of control are not inconsistent with market efficiency. What is more, the markets seems to be informationally efficient, that investors correctly anticipate the forthcoming announcement of an acquisition and 2) that, on average, value is created by the transactions for the target firms – target shareholders gain from such restructurings. These findings are encouraging and are new contributions to knowledge.

By further dividing the data sample into seven pairs of sub-groups according to seven different explanatory variables, the following was found.

[144] For example, Regulations on the Takeover of Listed Companies (上市公司收购管理办法) and Measures for the Administration of Disclosure of Shareholder Equity Changes of Listed Companies (上市公司股东持股变动信息披露管理办法), issued by the CSRC in September 2002.

1) The mean abnormal returns from the two stock markets, the Shanghai Stock Exchange and Shenzhen Stock Exchange, appear to be no different. This agrees with the theoretical arguments that a matching pattern in terms of share price adjustment should be expected when the two stock exchanges are designed to, and are, serving the same function.

2) The mean abnormal returns gained by investors in the industrial group of companies differ from those gained by investors in non-industrial companies for period day-60 to day-1. The market appears to view a takeover of non-industrial targets as more "value-adding" than when industrial firms are targeted.

3) When the sample is divided according to the criterion as whether the announcement occurred before the Securities Law became effective or after, it is concluded that the post-law markets seem to be able to anticipate the forthcoming event more promptly and perhaps more correctly than before the Securities Law became effective. This finding is consistent with that of Li et al. (2000) who conclude that the Chinese stock market's efficiency improves from 1994 to 1999.

4) When the sample is divided according to their sizes or its percentage of existing A shares, the degree of average abnormal returns received by sub-groups do not appear to be different. It is concluded that these two variables are of no explanatory power in assessing Chinese M&As or acquisitions of control.

5) When the sample is divided according to the percentage of legal-person shares (out of total outstanding shares of a target) involved in a transaction, it is found that the

market may favour the acquisitions that see higher voting power transferred compared to acquisitions where buyers obtain less voting power. The result gives support to Shleifer and Vishny (1986)'s finding that a company's expected profit is increased by large shareholders, relative to their percentage of ownership.

6) Acquisitions of control in China create value only when poorly performing targets are acquired. If well-performing targets are acquired, value is demolished by restructurings. This finding supports the hubris hypothesis and inefficient management hypothesis. Moreover, the finding may indicate that the government's intervention is harming minority shareholders.

6.2 Limitations and Future Research

The findings presented above, however, need to be treated with caution. After all, M&As in China are fairly different from those of other economies especially when considering that the targets are listed in a socialist stock market that is unique in the world. The possible limitations of the research, and indeed, how they might be improved by future studies, should therefore be fully noted. A few possible limitations have been analysed across the thesis and they are reviewed here.

6.2.1 Event Definition

There are different forms of M&As in China as detailed in Chapter 2. This study examined the market responses to the announcements of *legal-person share* transactions. The clear definition of this event has its advantages since it helps to pinpoint the market reaction to a particular type of news and reduces potential biased

effects from mixed types of news. However, the data set does not include *state share* transactions which was the other major form of transactions for M&As in China over the period studied. This could lead to speculations that the findings obtained using legal-person share transactions cannot present the real effects of M&As or acquisitions of control overall. However, the state share transactions are mostly "orders" from governmental departments. Some shares were transferred free of charge and some were transferred at prices that were not disclosed. This indicates that the information content contained in the announcements of state share transactions, if they are announced at all, may be different compared to that contained in legal-person share transactions' announcements. Nonetheless, exclusion of state share transactions may limit the explanatory power of the empirical findings presented in this study.

6.2.2 Data Availability

While almost all studies from the West seem to indicate that target shareholders gain through restructurings, the wealth gain for the acquiring company's shareholders is not so clear. This research was not able to address this issue due to limited data availability. Out of the 160 transactions for which data has been collected, only one buyer is listed. Therefore it would not be possible to examine the wealth gain to the acquirer's shareholders. Recent western literature also focused more on the long-term effects of M&As. However the study presented in this thesis could only examine short-term gains (with a 121-day event period being the longest window). This is because when the data was collected in late 2001, there were not enough data to carry out long-term wealth creation tests. Overall, these two data-related issues could be addressed by future research when more data becomes available.

6.2.3 Variable and the Choice of Proxy

Chapter 5 explored seven explanatory variables to examine their impacts on acquisitions of control. Some variable appear to be of more explanatory power than others. The size effect, for instance, when measured by the *absolute* value of the target, does not appear to exist in China. As analysed, this may be due to the proxy used. Western studies conventionally examine the size effect measured by the target size *relative* to the buyer size, whereas in Chapter 5, total value of assets of a target was chosen to be the proxy as the size variable. This choice of proxy may not be entirely correct. This limitation has been fully noted and it remains of future research interest.

6.2.4 Personal Perception

The background review in Chapter 2 presented one of the most comprehensive analytical descriptions of the development of China's corporate restructurings and its legislation improvement. However, due to the complexity of the subject itself, it would be too bold to claim that the *every* single related issue was covered. Indeed, one's personal knowledge and perception could influence the depth and the fairness of these descriptions and analysis.

6.3 Final Thoughts

The gains of M&As are affected by many variables. These variables are either directly or indirectly related to some extent – after all, they are all connected with the same underlying assets. It is therefore impossible to completely separate each factor and to identify what the individual influence is. However, this research provides useful information and enables one to go further in addressing the potentialities.

The competitive environment is ever changing. In May 2004, the Shenzhen Stock Exchange launched a "small and medium-sized enterprise (SME) board" (中小企业版) [145], a *de facto* embedded subordinate of the main board of SZSE. The board was designed to list the growing SMEs with outstanding main businesses and innovative high-tech start-ups. It was run semi-independently, with its own index, trade code and supervisory system. Companies that seek listings on the new board will have to meet the same requirements demanded by the main Shenzhen market. For example, entrants are required to show a three-year profit record and IPOs are subject to further approval, as detailed in Chapter 2. It has long been speculated that the main board of SZSE will eventually be merged with the main market in SHSE. Clearly, the setup of a SME board paves the way for a completely independent NASDAQ-style market in the future.

More recently in September 2005, the State-owned Assets Supervision and Administration Commission (SASAC) published a revised list of 169 large SOEs[146]

[145] Initially known as "Second Board" (第二版), also known as "Growing Enterprise Market" (创业版) (GEM)
[146] This was previously 49 in December 2003, later increased to 196, but reduced to 169 in September 2005.

and announced that the central government will focus on managing only these so called "central SOEs" (中央企业). The SASAC then confirmed that *all* the remaining SOEs would remain the responsibility of local governments to either close, restructure or sell off.[147] This latest decision is widely anticipated as the central government's determination to speed up privatisation and it will undoubtedly trigger a new wave of M&As in China.

[147] http://news.xyfund.com/092005/26/317091.html, accessed September 2005.

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Note: For a detailed list of Laws and Regulations mentioned in this thesis, please refer to Table 2.4.3.

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